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Office of Experiment Stations

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CLASSIFIED LIST OF PROJECTS

OF THE

AGRICULTURAL EXPERIMENT STATIONS

1924-25

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF EXPERIMENT STATIONS
WASHINGTON, D. C.

CLASSIFIED LIST OF PROJECTS CARRIED ON BY THE
AGRICULTURAL EXPERIMENT STATIONS,
1924-25

4/25

The number of projects carried on by the State experiment stations during the year 1924-25 was 5,538, an increase of 245 over the previous year. This is an average of about 110 projects per station. Of these projects 482 were carried on the Adams fund, averaging between 9 and 10 per station, the same as the previous year.

Of these 5,538 projects 54 are purely administrative or regulatory, leaving 5,484 devoted to research or experimentation.

In addition to the above, the insular stations of Alaska, Guam, Hawaii, Porto Rico, and Virgin Islands have 150 projects, which increases the total to 5,688 projects.

The total income of the State stations from all sources was \$10,034,074.86 which gives an expense of about \$1,811.86 per project. The five insular stations, with a total income of \$205,000 and 150 projects, average about \$1,365 per project.

In the subject classification of the projects it has been necessary in some cases to make entries under two or more heads. In consequence of this the 5,688 projects have been expanded to a total of 6,594 entries.

The general distribution of subjects is not changed materially from that of last year. The division of field crops leads with 1,817 projects, under which corn has 172 entries, wheat 164, potatoes 162, rotations 110, and cotton 99. The subject having the second largest number of projects is

horticulture, with 952, under which the leading entries are apples 115, fruits, general, 81, vegetables, general, 64, grapes 45, and peaches 44. The third largest group is plant pathology, with 482 projects, under which are potato diseases 47, apple diseases 36, cereal diseases, general, 26, and tomato diseases 21. This is followed by economic entomology with 472 projects, the largest subdivisions of which are bees 38, insecticides 34, systematic entomology 33, cotton insects and miscellaneous 22 each, and apple insects 21. Soils, the next largest group, has 343 projects, the principal headings being soil fertility 46, soil surveys 37, soil nitrogen 31, soil flora 30, tillage 29, soil types 26, and soil acidity 25. The remaining subjects in the order of the number of projects are agricultural economics 235, fertilizers 213, poultry 205, veterinary 203, dairy cattle 191, agricultural engineering 189, swine 189, feeding stuffs and animal nutrition 155, botany 144, genetics 126, dairy products 106, forestry 100, sheep 81, beef cattle 77, chemistry 55, foods and human nutrition 54, administration, control, and miscellaneous 54, seeds 31, economic zoology 30, weeds 22, bacteriology 20, animal husbandry, general, 16, meteorology 15, horses and mules 12, and agrotechny 5.

The principal increases of this year over last have been in field crops 95, entomology 50, engineering 49, soils 43, horticulture 33, plant pathology 32, poultry 32, feeding stuffs 29, economics 26, and forestry 25.

Projects which are carried on under the Adams fund are designated by (A). The State designated after the project indicates the station at which it is carried on.

May, 1925.

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CHEMISTRY.

Chemical Studies, Various.

- Chemical investigations of acid soils and of legumes grown on them.--To determine why some acid soils of Oregon respond to lime and others do not, and to what extent acid soils limit the growth of legumes. Oreg.(A)
- Chemical study of Gallatin Valley soils. Mont.
- Analysis of the agricultural soils and limestone of the State. Ky.
- Chemical study of Gallatin Valley ground water. Mont.
- Chemistry and metabolism of plants by varying degrees of vegetation and reproduction. N. H. (A)
- Microscopical and chemical study of proximate constituents of plants, their metabolism and translocation, with especial reference to influence of plant food ingredients. R. I. (A)
- Influence of climatic factors on the chemical composition of plants. Wis.
- The chemical and physico-chemical properties of plant tissue fluids. Minn.
- Protein investigations. Humin formation with especial reference to the structure of the compound resulting from the interaction of tryptophane and an aldehyde. Minn.
- A study of the proteins of green plants, including attempts to learn the nature of the non-protein substances with which they are associated. Conn. State. (A)
- The determination and significance of the amino-acid resulting from the hydrolysis of the proteins contained in seeds, grains, grasses, feeds and foods. Ky. (A)
- Protein investigations. Studies on the prolamines. Minn.
- Protein investigations. Sulphur in proteins. Minn.
- Chemical composition of forage crops as affected by various factors. Iowa.
- The phospholipins of seeds. Okla. (A)
- Phytosterols of the endosperm of grains. N. Y. State. (A)
- Composition of corn pollen. N. Y. State.
- A study of the factors which affect the quantity of gossypol in cotton-seed meal. Okla.
- The chemical composition of market grades of oats. Tex.

CHEMISTRY--Chemical Studies, Various. (Cont.)

Tests of sugar content and purity of sugar beets. Minn.

Analysis of sweet clover roots and tops for nitrogen. Minn.

A chemical study of the velvet bean.--To determine in what respect the velvet bean is deficient in nutritive properties or is otherwise injurious. Ala. (A)

Studies on wheat proteins. N. Dak.

A study of the chemical composition of fruits during development under varying conditions of treatment. Del. (A)

Effect of defruiting upon chemical composition and fruit bud formation. N. H. (A)

Study of the factors that induce jellying of fruits. Del. (A)

An investigation of the principles of jelly making as applied to tropical fruits. Hawaii.

Pigments of the grape. N. Y. State.

Determination of the effect of varying amounts of potash on the composition of oranges. Fla.

Biochemistry of disease resistance in plants. Minn. (A)

A study of the chemical changes in standard spray mixtures. Conn. State.

Determination of the iron content of certain food products. Ark.

The biochemistry of carotinoid pigments in animals. Minn.

A chemical study of the blood and excreta of dairy animals. Mich.

The effect of pressure on enzymes. W. Va. (A)

Studies of the availability of organic nitrogenous substances. Mich.

Variations in analytical weighings due to differences in temperature. N. Y. Cornell.

Standardization of biological stains. N. Y. State.

Miscellaneous chemical observations. Mont.

CHEMISTRY--Methods.

Improvement in methods of soil analysis. Wis.

The development of the calcium acetate method of determining so-called soil acidity. The development of a simple means of determining soil organic matter content; the nature of so-called soil acidity in Vermont soils. Vt.

Collaborative work on methods in connection with the A.O.A.C. on arsenic in insecticides. Me.

Studies of methods for the analysis of cacao products. Conn. State.

Studies of methods for the analysis of spices and other condiments. Conn. State.

Investigations to devise a more satisfactory method for the determination of lactose in milk. Ill.

Detection of butterfat adulterants.--To develop methods for detecting an approximate quantitative estimation of butterfat adulterants. Ind.

Simplification of the apparatus used in the Majonnier test for solids in condensed milk and ice cream. Wis.

A study of methods of preparing casein. Mich.

Investigation of proposed official methods of analysis. Minn.

Poisonous Plants.

Chemical study of the toxic principles of Aconitum columbianum. Wyo. (A)

Chemical study of the poisonous principles of arrow grass. Wyo. (A)

Chemical examination of Delphinium bicolor. Wyo. (A)

Chemical examination of Delphinium cucullatum. Wyo. (A)

Chemical study of the toxic principles of Delphinium menziesii. Wyo. (A)

Chemical study of the toxic principles of the seeds and fruits of Lupinus argenteus. Wyo. (A)

METEOROLOGY.

Miscellaneous.

Climatology. Ariz.

Meteorology. Irrigation investigations. Colo.

Meteorological observations. Mont. R. I.

Climatic data in northern Montana. Mont.

Climatic data at the Huntley Experiment Farm. Mont.

Climatic data in the Judith Basin. Mont.

Meteorological records.--To compare the climatological conditions of the different periods and to correlate the various weather conditions with the success or failure of different crops. Virgin Islands.

Meteorological report.--To determine the daily precipitation, evaporation, and maximum and minimum temperature at the Rice Experiment Station, Crowley, Louisiana. La.

Weather records. (North Central Substation) Minn.

Record of weather observations. (Northeast Substation) Minn.

Weather observations, with special attention to frost protection.
(Cranberry Substation) Mass.

Determination of nitrogen and sulphur in rainfall collected in protected and unprotected gauges. Ky.

The quantities, forms and sources of nitrogen and sulphur contained in the rainfall at Ithaca. N. Y. Cornell.

Snow survey. Utah.

BACTERIOLOGY.

Fermentation.

Studies of pentose-fermenting bacteria. Wis.

The association of alcoholic yeast (Saccharomyces ellipsoidens) and vinegar bacteria (Bacterium pasteurianum) as applied to the making of vinegar as a fruit by-product. Wash. (A)

BACTERIOLOGY--Fermentation. (Cont.)

Bacteriological studies of wild yeasts.-- To study the characteristics of wild yeasts isolated from apples and cider. Ill.

Studies of vinegar fermentation. Mich.

Vinegar culture work. Wash.

Food and Drinking-water Bacteria.

Microbiology of the food of man and domestic animals. Mich.

Nodule Bacteria of Legumes.

Studies on the longevity of B. radicicola in the soil. After the crop is removed how long do the bacteria live in the soil and retain the ability to inoculate the next crops? Mo.

Nodule organism of alfalfa and its relation to those of sweet and red clover. Ky. (A)

Pathogenic Bacteria.

Effect of disinfectants on Bact. pullorum and Bact. gallinarum. R. I.

Biological characters of Bact. pullorum. R. I.

Bacteriophagic specificity with special reference to B. pullorum infection and therapeusis. Mass. (A)

Studies of the Coccacae. N. Y. State.

Conidia formation in saprophytic bacteria and its relationship to filterable virus diseases of plants. Ark. (A)

Miscellaneous.

Generic types of bacteria. N. Y. State.

Differentiation of closely related kinds of bacteria. Iowa.

A study of the anaerobic bacteria. N. Y. Cornell.

Differentiation of fecal and non-fecal lactose splitting bacteria. N. C.

Value of certain carbon compounds as a source of energy for Azotobacter. Colo. (A)

BACTERIOLOGY--Miscellaneous. (Cont.)

Isolation and study of nitrifying bacteria. Idaho. (A)

Studies of bacteriological technic. N. Y. State.

BOTANY.

Anatomical Studies.

Further work on the histology of the phloem in certain woody angiosperms.
N. Y. Cornell.

Studies in embryogeny in angiosperms. N. Y. Cornell.

The anatomy and morphology of angiosperm flowers. N. Y. Cornell.

Morphological study of Mimulus and Mimetanthe. N. Y. Cornell.

Fungi.

Fungi of Arkansas. Ark.

Fungi of Porto Rico. N. Y. Cornell.

Study of plant pathogenes from the point of view of their biological characteristics. The determination of biological relations in the fungi imperfecti. Mich. (A)

Biologic specialization of parasitic fungi in relation to disease resistance in plants. Susceptibility of several varieties of beans to the different strains of anthracnose and rust of the bean. Colo. (A)

Factors governing conidial production by parasitic fungi. N. Y. Cornell.

General taxonomic study of forms in the genera *Botrytis* and *Sclerotinia*, especially with respect to the interrelationship of these forms, host ranges and biological strains. N. Y. Cornell.

Sexuality in the genera *Botrytis* and *Sclerotinia*, and the occurrence of heterothallic forms. N. Y. Cornell.

Life histories and classification of the fungus genus *Mycosphaerella*.
Md. (A)

A comparative study of muriform-spored genera of the Ophiasteriales and a monograph of the genus *Cucurbitaria* in the United States. N. Y. Cornell.

BOTANY-- Fungi. (Cont.)

The physiology of phytophthoras. W. Va.

The genetics of biologic forms of Puccinia graminis. Minn.

Morphological and taxonomic studies of Pyrenomycetes. N. Y. Cornell.

Studies of species of Pythium. Conn. State.

A monograph of the monilioid Sclerotinias - taxonomy and life history studies. N. Y. Cornell.

A complete study of Sclerotinia libertiana (Fuckel) as a plant parasite. N. Y. Cornell.

Investigations into the life history and parasitism of Sclerotium rolfsii. Ga. (A)

Sclerotium wilt diseases. A study of the causative agent and of the host plants of the fungus, the effect of various substances in the soil on the fungus, and a study of its life history. Ia. (A)

Biology of Sclerotinia spp. Minn.

The relation of microspores, "Spermatia", to life history and propagation of certain ascomycetes. Ga. (A)

The Ustilaginales of North America. Conn. State.

Tolerance of Saccharomyces ellipsoideus for acetic acid. Calif.

Plant Introduction.

Plant introduction. Tex.

Foreign seed and plant introductions. Pa.

Seed and plant accession. Trying out of new and introduced crops and perfecting those of value to California conditions. Calif.

The introduction of miscellaneous fruits, nuts, economic and ornamental plants. The importation of such new varieties and species as may appear to be adapted to conditions. Virgin Islands.

Introduction of exotic trees. The securing of trees that will succeed under adverse soil and moisture conditions--in general, on sand dunes. Mich.

BOTANY--Plant Introduction. (Cont.)

Tests with imported grasses and forage plants. S. C.

Plant Nutrition. (See also FERTILIZERS.)

The physiological effect on life processes of certain selected plants when growing under deficient or improper nutritive conditions. Mich. (A)

Investigation of the food requirements of plants growing in sand or in soil cultures. Md. (A)

Study by means of water and pot culture of the physiological effect and relationship of nutrient elements in plant growth. R. I. (A)

Growth of plants under controlled conditions. Calif.

Physiological effect upon and relationship of nutrient elements in plant growth by water and soil cultures. R. I. (A)

Factors which influence the relative growth of roots and tops of plants and conditions which affect root growths in cuttings. N. Y. Cornell.

The effect of varying the length of day on plant growth and chemical composition. Md.

Chemistry and metabolism of plants by varying degrees of vegetation and reproduction. N. H. (A)

Absorption of solutes by plants with especial reference to balanced solutions.--To determine a rational system for providing the proper salt requirement for agricultural plants from the point of view of proper rations or balanced salt action. Mich. (A)

Water requirements of crops as related to plant characters and environmental factors. Nebr. (A)

Relations of the morphology and physiology of plants to drought resistance. Kans.

Plant nutrition and its relations to parasitism, involving a study of the causes and relationship of attack and mode or causes of resistance to attack of parasitic fungi in flax, cereals, and associated crops. N. Dak.

Methods of studying mineral nutrition in green plants. N. Y. Cornell.

BOTANY--Plant Nutrition. (Cont.)

The salt requirements of representative agricultural plants. N. J. (A)

Determination of the salt tolerance of various plants when grown in sand, loam, and clay soils. Hawaii.

Tree injury from abnormal food supplies. Mont.

Study of ammonium sulphate in relation to plant growth. N. J. (A)

Functions of nitrogen, potash, and phosphoric acid in the production of the peach. Del. (A)

Studies on the nutrition of plants as affected by nitrogen and sulphur and by salts. Calif.

The relation of sulphur and sulphur compounds to cell structure. Md. (A)

Influence of form and amount of sulphur on growth and development of seed and of sulphur loving plants. Wis.

Function of sulphur as a plant food. Wash. (A)

Miscellaneous work in botany, including:- Methods of analysis of sulphur constituents of plants, Changes in sulphur compounds in germinating seeds of mustard and onions. Relation of sulphur distribution to the sulphate content of nutrient solutions. Minn.

Study of plants in relation to their comparative requirements for lime and magnesia and physiological or other reasons for variation therein. R. I. (A)

The toxicity of aluminum to crops. R. I.

Relation of chlorin to plant growth. Wis.

Availability and efficiency of various soluble and insoluble iron compounds in relation to plant production. N. J. (A)

Occurrence and distribution of manganese in plants. Ky. (A)

Effect of manganese, arsenic, copper, zinc, nickel, cobalt, cadmium, antimony and titanium on the growth of plants and the development of their seeds. Ky. (A)

BOTANY--Plant Nutrition. (Cont.)

Effect of rarer elements in plant growth. Calif.

The carbohydrate metabolism of plants. Calif.

Physiological function of different sugars in plant metabolism. N. Y. Cornell.

The role of "hemicelluloses" in plant economy. Iowa.

The method of movement of water, nutrients and food in plants. N. Y. Cornell.

The influence of H-ion concentration on the injury of plant tissue exposed to low temperatures. N. Y. Cornell.

The relation of H-ion concentration to the growth of plants. Mo.

Effect of hydrogen-ion concentration on growth of Lemna minor. N. Y. Cornell.

Plant metabolism and growth. Effect of CO₂ supply. Minn.

Fixation of free nitrogen by algae. N. Y. Cornell.

Studies in the nutrition of some green algae in pure culture. N. Y. Cornell.

Study of the essential or non-essential character of calcium in green algae. N.Y. Cornell.

A study of the relation of the concentration of nutrient solutions to the growth of the barley plant in sand and water cultures. The relation of solution to absorption and forms of combination of important elements. Calif. (A)

A study of the factors affecting the germination and growth of chamiza (Artiplex canescens). N. Mex. (A)

Studies in the metabolism of diseased and healthy corn. Ill.

Study with peaches on change of permeability and its relations to availability. Del. (A)

Nutrition and plant response of vegetables. Mo.

Metabolism studies with sweet corn. Md. (A)

BOTANY--Plant Nutrition. (Cont.)

Nutrition of the tomato. Studies intended to throw light upon conditions within the plant correlated with certain external treatments and the response of the plants to those treatments. At present confined to nitrogen nutrition. Calif.

Study of the translocation of the feed material of the wheat seedling. Iowa.

Plant Physiology.

General investigations in plant physiology in relation to horticulture.

A study of the rest period of deciduous fruit trees and of the nitrogen metabolism of the potato tuber during its rest period. Calif.

Dormancy studies on tuber, bulb, and root crops (including dormancy studies in the potato and onion) to determine whether the dormant periods of these crops may be modified. Calif.

Secretion of enzymes by fungi and influence of carbohydrates on enzyme production. N. Y. Cornell.

Reactions of enzymes to solutions within the plant. Del. (A)

Enzymatic activity as a limiting factor in production. Del. (A)

Microscopical and chemical study of proximate constituents of plants, their metabolism and translocation, with special reference to influence of plant food ingredients. R. I. (A)

The translocation of the mineral matter in plants. Ky. (A)

Optimum conditions of light for plant response. Mass. (A)

A study of light in its effects upon the tissues of certain horticultural plants, with special reference to reproduction. Ohio. (A)

The relation of light, temperature, and atmospheric moisture to the physiological salt balance in nutrient solutions for plants. Md. (A)

Length of day and its relation to the fertilizer requirements of horticultural plants. Wis.

Effect of length of insolation period upon growth and reproduction. Minn.

BOTANY--Plant Physiology. (Cont.)

Influence of duration of light on reproduction in *Manihottia*. N. Y. Cornell.

Effect of shade on fruiting habits and vegetative development of some horticultural plants, fruits, vegetables and flowers. Md.

Effect of low temperatures on plants. Varietal differences in frost resistance. Minn.

Effect of low temperatures on plants. Internal temperatures of trees in winter. Minn.

Study of the fundamental processes relative to the storage of sugars and other carbohydrates in the wood and inner bark of the maple, oak, elm, birch, apple, beech, ash, chestnut, etc. Vt. (A)

A study of the physiological factors influencing the production and development of root hairs, with particular reference to the genus citrus. Calif.

Physiology of reproduction. Role of growth promoting and inhibiting substances. Minn.

Physiology of reproduction. Temperature as a factor in self fertility. Minn.

Physiology of reproduction. Effects of fertilizer treatment upon self fertility. Minn.

Physiology of reproduction. Study of nutrition of the pollen tube. Minn.

Physiology of reproduction. Moisture relations of pollen germination and growth. Minn.

Investigation in respiration enzymes. (a) Oxido reductase. (b) State of oxidation in tissues. Minn.

Respiration of potatoes at low temperatures. N. Y. Cornell.

Lodging of small grains. Effect of environmental factors on chemical composition of plants, with special reference to this effect on the carbohydrate-nitrogen relation. Ohio. (A)

BOEANY--Plant Physiology. (Cont.)

Lodging of small grains. Effect of environmental factors on physical characters of plants, such as diameter of culm, length of culm, number of nodes, number of leaves, etc.; also, effect on moisture content of soil, rate of evaporation as measured by atmometers, wind velocity, etc. Ohio. (A)

Lodging of small grains. Effect, if any, of environmental factors on the formation of condensation products, with special reference to cell wall material and strengthening substances, such as lignin. Ohio. (A)

Lodging of small grains. The relation of field conditions and cultural practices to the carbohydrate-nitrogen ratio, particularly to the nitrogen. Ohio. (A)

Lodging of small grains. Varieties in relation to the carbohydrate-nitrogen ratio, particularly the carbohydrates, by virtue of variation in their stooling characteristic. Ohio. (A)

Lodging of small grains. The effect of shading with cheesecloth on the carbohydrate-nitrogen ratio, particularly as to the carbohydrate; or, the effect of reduced sunlight on the development of carbohydrates. Ohio. (A)

Physiological effect of arsenical compounds on vegetation. Mont. (A)

Miscellaneous physiological investigations in connection with the pineapple plant.--To gain a clearer understanding of the plant in order to be able to answer the many questions that are being asked. Porto Rico

Systematic Botany.

Study of the wild asters of the "Paniculatus" group. N. Y. Cornell.

Studies on the Ericas. Calif.

Natural hybrids in Mimulus. N. Y. Cornell.

Revision of the genus oxalis. A critical study of our eastern species of wood sorrel. N. Y. Cornell.

Mushrooms and toadstools. N. Y. State.

A survey of the wild mushrooms occurring in Minnesota. Minn.

BOTANY--Systematic Botany. (Cont.)

Survey of the flora of Newfoundland, with preparation of a flora.
N. Y. Cornell.

A survey of the flora of the Virgin Islands and the preparation of
an herbarium. Virgin Islands.

Miscellaneous.

The tolerance of plants to acid conditions as determined by the H-ion
concentration. Del. (A)

Tolerance of crops for alkali. Idaho. (A)

A study of the correlations between certain physical characteristics
of plants and their capacity to yield. S. Dak. (A)

Susceptibility, resistance, and so-called phagocytosis in orchard em-
bryos. N. Y. Cornell.

Conditions of parasitism. N. Y. Cornell.

Preparation of a manual of the trees, wild and cultivated, grown in
Maryland. Md.

Ecological studies in the Cayuga Lake basin. N. Y. Cornell.

A study of the economic status of Horned Lake in California. N. Y.
Cornell.

The flora of North Carolina. N. C.

Trees and shrubs of North Carolina. N. C.

The major plant ecological features of North Carolina. N. C.

Descriptive ecology of Savannahs, especially of Big Savannah, Pender
County, North Carolina. N. C.

Physical factors of Savannah habitat. N. C.

Investigations on native plants, weeds, and fungi; seed analyses and
crop inspection. Investigation of the possible value of certain econ-
omic native plants. N. Dak.

BOTANY--Miscellaneous. (Cont.)

Biological survey.--To make a survey of and collect biological and economic data upon native and introduced plants and animals of the State, their distribution, habits, and agricultural importance. H. Dak.

The distribution, adaptation, and mode of life of the Resurrection Fern (Polypodium polypodioides). N. C.

To identify samples of weeds, poisonous plants, ornamentals, trees, wild plants and mushrooms, and to diagnose plant diseases. Md.

The decomposition of chlorophyll in Satsuma orange rinds. Ala. (A)

Factors influencing the oil content of cotton seeds. S. C. (A)

Effect of straw on plants. N. Y. State.

Calcium oxylate crystals in plants. Ky.

A study of canaliculi in plant cells. N. Y. Cornell.

The utilization of Typha angustifolia and T. latifolia for heat insulation and other commercial products. N. Y. Cornell.

Anatomy and histology of some plant fossils from the Upper Devonian of New York. N. Y. Cornell.

GENETICS.

General Analysis of Inheritance.

Genetical studies in alfalfa. Studies of the F_2 plants from the cross Medicago sativa X M. falcata. N. Dak.

Studies on inheritance in barley. Ill.

Mendelian studies with corn. N. Y. Cornell.

Genetic studies of corn, with special reference to linkage. N. Y. Cornell. (A)

Chromosome studies in maize. N. Y. Cornell.

Embryogeny and kernel development in maize. N. Y. Cornell.

Origin of plastids and their relation to other cytoplasmic structures in maize. N. Y. Cornell.

GENETICS--General Analysis of Inheritance. (Cont.)

Genetic analysis of maize, including (a) the inheritance of Mendelian characters in maize, (b) the relative frequency of crossing over in microsporogenesis and megasporogenesis, (c) the occurrence and frequency of mutation in the factor of pericarp color in maize, and (d) competition among male gametes in maize. Mo. (A)

Fundamental study of inheritance in cotton. Tex. (A)

A study of heredity and development in the cotton plant. Miss. (A)

The genotypic constitution of certain varieties of cotton.--To study the mode of inheritance and association of economic qualities in cotton. N. C. (A)

Genetic studies in soy beans. Ill.

Correlation of characters in grain. Colo.

Mendelian studies with wheat and oats. N. Y. Cornell.

Studies of inheritance in oats. Pa. (A)

A genetic study of aberrant and false wild types in Kanota oats. Kans. (A)

Studies on the chromosome number of different wheat species. Minn. (A)

A study of the chromosome number of various pure lines of wheat. Minn. (A)

Genetics in wheat.--To obtain data as to quantitative amount of transgressiveness in earliness, height, and size of kernel in Kota-Marquis crosses in comparison with the parents. N. Dak.

Genetic studies with bramble fruits, especially raspberries. Determination of factors limiting culture of Rubus species in the South Atlantic States. N. C. (A)

Genetic investigations in the genus Crepis, the smooth hawkbeard. Calif. (A)

Genetic studies with Juglans regia, including methods of propagation. A study of Eastern varieties and discoverable hybrids. N. C. (A)

Mendelian studies with cabbage. N. Y. Cornell.

Inheritance in Brahma and Hereford cattle. Tex. (A)

The transmission of sex in dairy cattle. Ill. (A)

GENETICS--General Analysis of Inheritance. (Cont.)

Inheritance of horns, wattles, and color in grade Toggenburg goats.
Tex.

Studies of heritable characters in swine. Okla.

Inheritance studies in poultry. Iowa.

Breeding experiments to determine the behavior in inheritance of certain unit characters (with poultry). Ky.

A genetic Study of Rhode Island Red color. Mass.

Inheritance of eye color in poultry. Kans.

Inheritance of contrasting characters in White Leghorns and Jersey Black Giants. Kans.

Studies of inheritance in pigeons. Wis.

Studies of color inheritance in rats. Kans.

Studies of color inheritance in Guinea pigs. Kans.

Studies on the genetics of goldfish. N. Y. Cornell.

Studies of inheritance in Orthoptera. A study of the fundamental laws of inheritance in several species of the genus *Paratettix*. Kans. (A)

Studies on the heritability or non-heritability of the color pattern in Hemiptera. Minn.

The effect of temperature and moisture conditions on inheritance in Orthoptera. Kans. (A)

Breeding.

Methods of selection breeding. Colo.

The improvement of naturally cross-fertilized plants by selection in self-fertilized lines. Conn. State. (A)

A study of the effect of inbreeding in smooth brome grass (*Bromus inermis*) and alfalfa (*Medicago sativa*). N. Dak. (A)

GENETICS--Breeding. (Cont.)

Breeding for hardiness in fruits. Minn. (L)

Inbreeding:--effect on vigor, production and reproduction. Ohio

Line breeding vs outcrossing (dairy). W. Va.

Inbreeding and line breeding compared with outcrossing as regards its effect upon dairy cattle, their milk and butterfat production, conformation, fecundity, and general characteristics. Idaho.

Study of laws governing the breeding of domestic birds. R. I. (A)

Selective fertilization in fowls. Conn. Storrs.

Relative influence of sire and dam on the offspring (with poultry). Oreg.

Effect of accumulative selection on external characters (with poultry). N. Y. Cornell.

Studies on inbreeding with Rhode Island Red fowls. Effects of inbreeding on fowls. Wis. (A)

A genetic study of inbreeding in fowls (White Leghorns).--(a) Production of homozygous strains for use in future experiments, (b) Continued close inbreeding on twelve characteristics, including fecundity, fertility, hatchability, weight and shape of eggs, body size, growth rate, etc. (c) Study of the inheritance of traits tested under (b). Conn. Storrs. (A)

Effect of arsenic (Fowler's solution) upon the reproductive powers of the individual and its offspring. Ill. (A)

Studies of effects of inbreeding upon size, age of sexual maturity, litter size, vitality, etc., of guinea pigs. Kans.

Studies of the physiological phases of reproduction in guinea pigs. Kans.

Hybridization.

A study of the laws of inheritance through hybridization. N. Y. Cornell. (A)

Cytological studies of teosinte-maize hybrids. N. Y. Cornell.

Inheritance in a cross of Avena sterilis algeriensis and Avena nuda inermis. Ohio.

GENETICS--Hybridization. (Cont.)

The inheritance in root crosses between Sudan grass and Johnson grass.--
To determine the mode of inheritance of the root systems in crosses
between Johnson grass and Sudan grass. Ga. (A)

Sterility of hybrids of Nicotiana. Pa.

Hybridization of Rotundifolia grapes with other species.--To determine
the various species with which Vitis rotundifolia will hybridize.--
To find methods of overcoming incompatibility where it occurs.--To estab-
lish a scale of hybridization of Vitis rotundifolia with other spec-
ies. N. C. (A)

Study in the origin of species, or the development and improvement by
hybridization of the genera viola and rubus. Vt. (A)

Inheritance of Characters.

To determine in what degree different factors are inherited independent-
ly of each other in strains or races where these factors have always
been inherited together. Ill. (A)

Alfalfa. A study of heritable characteristics in pure lines of alfalfa.
Ariz. (A)

Inheritance of hardiness in alfalfa.--To obtain data as to the genetics
of hardiness in alfalfa and thereby to lay a foundation for future
practical breeding operations. N. Dak.

Inheritance study in cereals. A study of the laws of inheritance with
reference to specific characters. Wash. (A)

Effects of selection in pure lines and the inheritance of various charac-
ters in crosses between pure lines. The effect of selection in pure
lines of barley. Minn. (A)

A study of inheritance of characters in corn, with particular regard to
their linkage relations and location of factors in the chromosomes.
Conn. State. (A)

The inheritance of prominent ear and stalk characters of corn and their
relation to yield, namely: (a) shape of ear, (b) length of ear, (c)
number of rows per ear, (d) filling of tip, (e) indentation of kernel,
(f) height of ear in stalk, (g) height of plant, (h) proportion of
grain to cob. Ohio.

GENETICS--Inheritance of Characters. (Cont.)

Inheritance of barrenness in corn. S. C. (A)

Inheritance in cats.--To determine the factors controlling the inheritance of color, hull, and hulllessness, by means of hybridization and segregation. S. C. (A)

A study of the inheritance of certain characters in relation to yield and quality in wheat, oats, sweet corn, beans and apples. Me. (A)

Inheritance in grain sorghums. Tex. (A)

Wheat. The genetics of dwarf wheats in Kota-Marquis hybrids.--To study methods of inheritance and to learn the economic importance, if any in wheat, of the presence of the factor carrying dwarfness. N. Dak.

Inheritance of stem rust resistance of wheat. N. Dak. (A)

A study of the inheritance of fruit characters in cotton. Ark. (A)

A study of the manner of inheritance of the various economic characters in beans. Ariz. (A)

A study of the inheritance of chemical character, especially carbohydrates, in dent and sweet corn. Iowa.

Inheritance of alkaloidal content and other characters in *Datura*. Wis.

A study of the inheritance of characters in fruits. Minn.

Inheritance of characters in tree, vine, and bush fruits. N. Y. State
(A)

Study of the transmission of characters in *Vitis rotundifolia* hybrids.
N. C. (A)

Inheritance of size of fruits in *Rotundifolia* grapes.--To determine the factors governing the size of berries in *Vitis rotundifolia* and method of transmission of the character. N. C. (A)

Inheritance of flower color and flower form in *Phlox drummondii* and of flower color in *Marabilla jalapa*. Pa.

Investigation of inheritance of disease resistance in plants. Wis.

Effect of low temperature on plants. Inheritance of frost-resistance character. Minn.

GENETICS--Inheritance of Characters. (Cont.)

Multiple births in cattle. Wis.

The study of the inheritance of characters in dairy cattle in a cross-bred Guernsey-Holstein herd. Ill.

Experimental analysis of the hereditary factors determining milk and meat production in cattle. Wis. (A).

The mode of inheritance of milk production and associated characters in cattle. Me. (A)

The inheritance and transmission of the character "capacity for fat production". Mo.

The inheritance of capacity for fat production in dairy cows. Conn. Storrs.

Inheritance of fleece characters in purebred and crossbred sheep. Breeding sheep for wool production. Wyo. (A)

Inheritance of the fur qualities of Karakul sheep. Tex.

A study of the inheritability of wool by market grades.--To secure data on the market grades of wool produced by different individuals and breeds in the college flock and compare with the grades produced by sires and dams. N. Dak.

Inheritance of the ridgling characteristics in goats. Tex.

Type and inheritance in Angora goats. Tex.

Inheritance of factors making for rapid and economical gain in Poland China hogs.--To determine if rate and economy of gain are transmissible characters. Ill.

Inheritance of resistance to hog cholera.--To determine if resistance to hog cholera is inherited and, if so, to study mode of inheritance and to establish an immune strain. Ill.

Breeding for natural resistance to hog cholera. Iowa.

Breeding and genetic problems involving the improvement of strains of fowls particularly along production lines. Calif.

GENETICS--Inheritance of Characters. (Cont.)

Inheritance of egg production. Kans. Oreg.

Study of inheritance of egg production and inherited characters. Ohio.

Inheritance of egg production in heavy breeds. N. Y. Cornell.

Inheritance of egg production in Leghorns. N. Y. Cornell.

Inheritance in egg production. Data on maturity as indicating productive ability, inheritance of size and color of eggs and similar characters. Nebr.

The inheritance of size and color of hens' eggs. Ohio.

Inheritance of body weight in poultry. R. I.

Inheritance of body weight in poultry crosses. R. I.

Inheritance of egg weight in poultry. R. I.

Hereditary factors as possible causes of inshell deaths and subsequent low hatchability of hens' eggs, and effect of single factors and their transmission in inheritance. Conn. Storrs. (A)

A study of the genetic factors involved in the hatching of eggs. (a) Breeding. (b) Measurement of other characteristics. Conn. Storrs. (A)

Studies on the inheritance of plumage colors and patterns in poultry.

(a) Inheritance of sex-linked plumage characters.

(b) Linkage between several sex-linked genes for plumage characters.

(c) Inheritance of other characters. Conn. Storrs. (A)

The mode of inheritance and linkage relation of sex-linked and autosomal factors in poultry. Me. (A)

A study of the inheritance of fecundity in White Leghorns. (a) Analysis of existing records. (b) selection and crossing of high and low producing strains. Conn. Storrs. (A)

The inheritance of weight, color and texture of shell of eggs in the single-comb White Leghorn. Idaho.

Genetic studies of resistance of chicks to bacillary white diarrhoea. Ill. (A)

GENETICS--Inheritance of characters. (Cont.)

A study of the heritability of resistance and susceptibility to infectious abortion. Wis.

Studies of inheritance of defects in guinea pigs. Kans.

Studies of the inheritance of size in guinea pigs. Kans.

Variations and Mutations.

The origin, nature and inheritance of apparent mutations in certain plants. (Citrus Substation, Riverside) Calif.

Inheritance of variations induced by difference in nutrition of wheat. N. Y. Cornell.

The plant-breeding value of mutation and other types of variation in wild and cultivated plants. N. Y. Cornell. (A)

Variations in the common daisy. N. Y. Cornell.

SOILS.

General Soil Studies.

Soil studies, especially regarding conditions and properties of phosphoric acid, potash and humus, and the nitrifying and other biological properties of soil. Tex. (A)

The abnormality of soils in cylinder and lysimeter experiments.--To determine the presence or absence of zinc in cylinders where crops have failed. A comparison of glazed tile and galvanized iron cylinders, with and without a coating of asphalt. The effect of surface drainage and the losses of nitrogen and lime. Tenn. (A)

The immediate and residuary effects of soluble salt on the physical and chemical properties of soils. Mich.

A study of the replaceable bases in soils. Calif.

Translocation of soluble salts in soils and its relation to amount and manner of application. Mich.

Investigation of petroleum-saturated soils. Ill.

SOILS--General Soil Studies. (Cont.)

A study of the utilization of the soils of the Gilroy soil survey area. Calif.

Uniformity tests on soil bins. Ill.

A study of the effect of concrete walls of Hopkins' soil bins upon the composition of drainage water. Ill.

Acidity--Soil Reaction; Liming. (See also FERTILIZERS--Lime.)

A study of the nature and intensity of soil acidity. W. Va. (A)

Soil acidity studies.--To throw more light upon the various phases of soil acidity, its nature, its kinds in different types of soil, its effect upon various crops, the effect of various fertilizers and soil treatments upon soil acidity. Ind.

Soil acidity--its cause, interrelations with different crops, effect of aluminum in association. R. I. (A)

Study of physical-chemical aspects of soil acidity. Investigation of
(a) the relationship of adsorption to the production of soil acidity,
(b) the effect of soil acidity on the osmotic and other physical-chemical properties of soils. Mich. (A)

Chemical investigations of acid soils and of legumes grown on them.--To determine why some acid soils of Oregon respond to lime and others do not, and to what extent acid soils limit the growth of legumes. Oreg. (A)

Hydrogen-ion concentration of soils. Del. (A)

A study of acid soils of the State. Ark.

A study of the active acidity values of Delaware soils and methods of modifying acidity values. Del.

Hydrogen-ion concentration of the most important soil profiles of the southwestern and south central parts of the State. Minn.

An acidity survey of soil types by counties. Oreg.

Soil acidity and liming. Nebr.

Relation of limestone to acidity, fertility and soil structure. Oreg.

SOILS--Acidity--Soil Reaction; Liming. (Cont.)

Studies in lime requirements of various soil types found in the State.
Del.

Testing soils for their lime need. Mo.

The lime requirement of soils. Comparative results of different methods for determining lime requirements, and the effect of grinding soils upon their lime requirements as determined by different methods.
Ill.

Lime requirements of an acid soil.--To compare the value of different forms of lime. MA.

Studies on the calcium content of soils and its relation to acidity and the response of soils to liming. Mo.

Lime requirements of the soils of New Hampshire. N. H.

The development of the calcium acetate method of determining so-called soil acidity and of a simple means of determining soil organic matter content. The nature of so-called soil acidity in Vermont soils. Vt.
(A)

The behavior of limestone and phosphates in relation to soil acidity, including H-ion concentration studies. Ky.

Soil reaction studies. Conn. State.

Chemical analysis and reaction studies of particular pasture soils.
Conn. State.

The physico-chemical properties of soil acids and the relationship between soil calcium, soil acidity, and the plant response to lime. Ala.
(A)

A fundamental study of the mechanism of buffer action in soils. Del.
(A)

The tolerance of plants to acid conditions as determined by the H-ion concentration. Del. (A)

Alkali.

The natural occurrence of alkali in soil under cultivation. Wyo. (A)

Action of soil alkali.--To determine the effects of organic matter and soil texture on the action of alkali and the changes which occur in alkali salts in the soil. Utah. (A)

SOILS--Alkali. (Cont.)

A study of impermeability in certain irrigated soils. N. Mex. (A)

Percolation from alkali soils treated with alum and from those not treated. Irrigation water and percolation water from all lysimeters analyzed for salts in solution. Oreg.

Reclamation of alkaline lands in the Salt River Valley. Ariz.

Reclamation of alkali lands by flooding and drainage. Calif.

Leaching of drained alkali lands in Imperial Valley.--To work out the best procedure for removing the alkali. Calif.

Gypsum treatment of black alkali at the University Farm. Ariz.

Reclaiming alkali soils in the Yellowstone Valley. Mont.

A study of the chemical, physical, and physiological effects of salts on soils and crops, and of methods of reclaiming alkali lands. Calif.

Slick spots in soils, their nature and reclamation. Idaho.. (A)

~~Correction~~ of alkali and "slick spots".--To find some method of eliminating the "slick spots". Idaho.

Soil correction trials. Crops, fertilizers and cultural treatment for "white land". Oreg.

Experiments on relative tolerance of certain crops to alkalinity and high concentrations of salts, and a further study of methods of testing alkali soils, with special reference to correlation between chemical tests and toxicity to plants. Calif.

Tolerance of crops for alkali. Idaho. (A)

The influence of concomitant soil conditions on the tolerance of crops for black alkali. Ariz. (A)

Composition of Soils.

The composition of soil types. Tex.

A comparison of the total calcium content of cultivated and virgin soils, with particular reference to the possible limitation of crop production by deficiency of this element. Ky.

The movement of calcium in soil. N. Y. Cornell.

SOILS--Composition of Soils. (Cont.)

Studies on the movement of lime in various forms through Hagerstown silt loam soil by means of lysimeters. Va.

"Active" aluminum of the soil as influenced by manurial treatments. R. I.

The reaction, aluminum, and phosphorus of the soil as influenced by different crops. R. I.

Phosphorus and metal absorption of crops as influenced by the preceding crop. R. I.

An investigation of the changes in the crop-producing power and the physico-chemico-biological properties of soils long under cultivation. Mich.

The effect of continuous application of fertilizer on composition of soils. S. C.

The effect of long-continued cropping and fertilization upon the chemical and biological properties of the soil of the Morrow and Davenport plats. Ill.

A study of the change in ten years of the utilization of the soils of the San Fernando Valley. Calif.

Amount and condition of drainage water from soils, with special reference to the effect of liming and cropping. N. Y. Cornell.

Lysimeter investigation. Mineral constituents. N. Y. State.

Organic Matter in Soils.

Origin, nature and functions of soil humus (alkali soluble organic matter). Pa. (A)

Relation of organic matter (humus) of the soil under different systems of soil management to crop production, with special reference to changes which take place in the plant food content and the physical condition of the soil. Iowa. (A)

A study of the organic matter in soil.--To ascertain the relation between the cropping capacity of soils and the character of the organic matter. N. Dak. (A)

SOILS--Organic Matter in Soils. (Cont.)

The nature of the organic matter of calcareous and non-calcareous soils.
N. Y. Cornell.

Laboratory study on the maintenance of nitrogen and organic matter in
the manure and crop rotation experiments. Ky.

Maintenance of organic matter in eastern Washington soils. Wash. (A)

To study the effects of irrigation, rotation, and manure on organic mat-
ter supply. Oreg.

To determine the organic matter and humus content in Oregon soil types.
Oreg.

To determine the value of straw, cover crops, and green manure in main-
taining organic matter. Oreg.

Effect of lime on the decomposition of organic matter in soils. Del.
(A)

The effect of heavy application of dry organic matter (rye straw) on the
germination and growth of legume and non-legume crops. N. J.

Removal v. non-removal of organic matter in soils. Miss.

The inoculating value of small quantities of manure in connection with
the use of cover crops in the continuous growing of corn. N. J.

Residual Effects of Crops. (See same heading under FIELD CROPS.)

Soil Erosion and Leaching.

Experiment in soil erosion.--To determine amount of runoff and erosion
on plats of the same length under different crops, and of different
lengths under the same crop. N. C.

Studies of water absorption, run-off, percolation, composition,
capillary water movement and soil erosion under field conditions. Mo.
(A)

Control of erosion. Ill.

Mechanical methods for checking soil washing. Ill.

SOILS--Soil Erosion and Leaching. (Cont.)

Soil erosion in Nebraska. Nebr.

Soil Fertility (See also FIELD CROPS--Rotations.)

Soil requirements. N. Y. State.

Fertility plats. W. Va.

Crop rotation and fertility. Okla.

A complete fertility test. S. Dak.

Permanent system of fertility. Ill.

Permanent fertility studies. (Greenville and Nephin Substations) Utah. (A)

Relation of geology and chemistry of soils to their productiveness and fertilizer requirements. N. C. (A)

Soil investigations.--To determine the needs of the soils of this area. Idaho.

Pot experiments on effects of fertilization of important soil types. Conn. State.

Maintenance of fertility. A study of the effect of reinforcing farm manure with raw rock phosphate in systems of continuous cropping with wheat, corn, oats, and barley; and a 5-yr rotation consisting of corn, barley, wheat, sweet clover, flax. N. Dak.

Maintenance of soil fertility. A comparison of steamed bone meal, ground raw rock phosphate, and acid phosphate on carriers of phosphate in livestock and grain farming districts. N. Dak.

Maintenance of soil fertility. A study of the influence of supplementing manure and crop residues respectively with acid phosphate, ground limestone, and sulphate of potash in various combinations. N. Dak.

Experiment in maintaining fertility in the garden. (a) The minimum amount of manure necessary to obtain profitable vegetable crops, (b) to what extent green crops and fertilizers can be substituted for manure. (c) a profitable combination of chemical fertilizers and manure, and (d) the effect of lime upon crop production. N. H.

Soil rejuvenation and fertility study. The use of green manure crops and the effect of certain mineral fertilizers. N. H.

SOILS--Soil Fertility. (Cont.)

Use of legumes in building up soil fertility. (Sandpoint Substation)
Idaho.

Utilization and fertilizer requirements of important soil types of
Connecticut. Conn. State.

Soil fertility studies on soil types.--To determine plant food deficiencies of different soil types and the fertilizer forms for specific crops. N. C.

Pot culture experiments with six types of Iowa soils. Iowa.

Soil fertility studies on south soil test. Mass.

A study of varietal adaptations and fertilizer requirements on Red River Valley soils. The effect of commercial fertilizers on crop growth. Minn.

Maintenance of soil fertility.--To determine the best methods of maintaining or increasing the productive capacity of the Fargo clay of the Red River Valley. N. Dak.

Field and pot tests to determine the fertilizer requirements of Dekalb soils. Pa.

Field experiment on Volusia soil.--To determine the lime and fertilizer requirements. Pa.

Field experiment on Westmoreland soil.--To determine the lime and fertilizer requirement. Pa.

Soil fertility investigations in western Washington. Wash.

Availability and utilization of plant nutrients in soils under different methods of treatment. N. Y. Cornell. (A)

Effect of different methods and classes of farming on soil fertility. Wis.

To test various mixtures of fertilizer salts on different courses in a crop rotation as means of maintaining soil productivity. N. Y. Cornell.

Plant food losses from the soil, due to different crops. Mont.

A study of the underlying factors influencing soil fertility, as evidenced by the chemical composition of the soil solution. Calif.

SOILS--Soil Fertility. (Cont.)

Microbiological and other agencies as affecting soil solutions. Calif.

Effect of various factors upon losses in drainage water of mineral elements which are necessary to crop growth. Ill.

Sulphur in plants and soils and its significance to permanent soil fertility; also, determination of the best sulphur compound for correcting sulphur deficiency in soils. Ky. (A)

The influence of rotations upon the maintenance of soil fertility. S. Dak.

Crop rotation and fertilizer experiments.--To determine the influence of various rotations maintaining soil fertility. Mo.

To ascertain the effect on soil productivity of continuous cropping when the organic matter of the soil is maintained by means of seeded crops. N. Y. Cornell.

Field study of comparative crop rotations with reference to effect of certain crops on succeeding crops and on the permanent fertility of the soil. S. Dak.

Study of the residual effects upon the soil and of the utilization by rotation crops of the commercial fertilizers, manure, and lime. Pa. (A)

The rate of accumulation and cost of nitrogen and carbon in soils under different systems of green manuring and cropping.--To determine the effect of different systems of green manuring and cropping upon the accumulation and loss of nitrogen and carbon in the soil. Mo.

Soil fertility studies. Effects of certain crops on soil fertility. .
Plots planted to various crops and combinations of crops, followed by wheat as an indicator of the fertility. Miss.

Reclamation experiment to determine best method of improving worn-out gullied soils. Va.

Cause of unproductiveness of recently cleared coniferous timber soils, relation of toxicity thereto and corrective measures. Idaho. (A)

A preliminary study of the causes and corrections of persistently unproductive garden soils. Pa.

Study of infertile soils. Mont.

SOILS--Soil Fertility. (Cont.)

Study of the soil conditions in Placer County as a possible cause of injury to orchards. Calif.

Fertility investigations on farms owned by the State. Iowa.

Trial fields at Groton and Vermillion. S. Dak.

Soil Flora.

Soil microbiology. Mich. (A)

Studies of soil microbiology complexes and fundamental relationships involved. N. J. (A)

Microbiological study of certain Oregon soils having an acid reaction. Oreg. (A)

Efficiency of microorganisms, with reference to increasing crop production and for control of those which tend to be destructive. N. Dak. (A)

Soil organisms, their functions and their relation to the ammonification of farm manures. N. Y. State. (A)

Factors influencing the bacterial activities of the soil. Utah. (A)

Bacterial activities and crop production. Iowa.

Treatment of soils as affecting bacteria. Iowa.

Relation of biological activities in the soil in crop production as affected by definite agricultural practices. Wash.

Effects of different soil treatments, long continued, upon bacterial activity in the soil. Mo.

Some biological changes brought about in certain soils by different cropping, fertilizers, liming, and manurial treatments. Del. (A)

Bacteriological effect of green manures on a typical Mississippi soil. Miss. (A)

The relation of microorganisms to the decomposition of organic compounds toxic to the growth of higher plants. Ala. (A)

SOILS--Soil Flora. (Cont.)

Effects of wood and forest products on bacteriological activities in soil: (a) ammonification and nitrification; (b) nitrogen fixation. Idaho. (A)

The effect of commercial fertilizers on bacterial activities. Iowa.

Effects of alkali salts on bacteriological activities in soils. Idaho. (A)

Effect of soil acidity on bacteria associated with the nitrogen cycle. Wis. (A)

Growth of bacteria in sterilized soil, both planted and unplanted, when inoculated with pure cultures of certain bacteria capable of producing transformations of nitrogen. N. Y. Cornell.

A study of calcium sulphate and biological reactions in soil. N. Y. Cornell.

Isolation of pure cultures of organisms capable of oxidizing sulphur compounds in soil and solution. N. J. (A)

The soil solution and its role in the life of microorganisms. Mich. (A)

The influence of nutrition on nitrogen fixation by Azotobacter chroococcum. Ohio. (A)

A study of the influence of the absolute reaction of the soil solution upon the growth and activity of Azotobacter in soils. Kans. (A)

Azofication:--effect of reaction upon the growth of Azotobacter. Pa.

Studies on the longevity of B. radicicola in the soil. After the crop is removed, how long do the bacteria live in the soil and retain the ability to inoculate the next crops? Mo.

Soil actinomycetes. The occurrence and metabolism of soil actinomycetes and their role in soil fertility. N. J. (A)

Soil bacteriological investigation methods. Iowa.

Critical study of soil microbiological methods and of principles upon which they are based. N. J. (A)

SOILS--Soil Flora. (Cont.)

An inventory of the non-spore punctiform colony-forming bacteria in soil. N. J. (A)

The soil bacteria and fungi of Savannah soils. N. C.

Soil Management.

Experiments to determine the best systems of soil management for the most important soil types in Missouri, the need of lime, phosphorus, potash and nitrogen, as well as the return to be secured, the use of green manures, farm manures, in some cases drainage, and certain cultural methods. Mo.

Soil management studies, including (a) moisture and structural relationships of the soil, (b) fertilizer needs of representative soils, and (c) immediate and residuary effects of different forms of lime and phosphorus. Mich.

Soil management and fertilizer investigations. The upbuilding of fertility of the more important soil types. Md.

Soil management experiments.--To learn the best method of managing soils and maintaining fertility under Alaskan conditions. Alaska.

Management of sandy soils. Wis.

Management of marsh soils. Wis.

Management of heavy clay soils. Wis.

Management of irrigated soils. Wash.

Management of new soils.--To determine the most advisable treatment for newly plowed native grass land. Guam.

Tests of certain methods of soil management applied to Ontario loam and Volusia silt loam at Churchville, Alfred and Virgil. N. Y. Cornell.

Soil Moisture.

Soil moisture investigations. Nebr.

Fundamental soil moisture constants. Utah. (A)

SOILS--Soil Moisture. (Cont.)

Moisture, soil, and crop relations. Utah.

Soil moisture and root germination studies. Ariz.

Movement of water in soils. Minn. (A)

Factors affecting distribution of water in soils. Calif.

A study of water relations, such as movement of soil moisture due to capillarity and gravity, percolation and distribution, moisture equilibrium, moisture content of soils, and wilting point. Wash.

The effect of the size of the container and such external factors as temperature and relative humidity, upon the rise and rate of rise of capillary water through soil columns. (Davis Substation) Calif.

Systematic soil moisture studies under humid, dry farming, and irrigated conditions, to determine value of (a) different tillage treatments, (b) fertilizers, and (c) manure increasing the efficiency of moisture made available. Oreg.

To determine the amount and rate of use of soil moisture by the small grain crops and corn, the depth of penetration and use, and the amount of water stored on fallow. (Dickinson Substation) N. Dak.

Water requirement studies. Oreg.

Relation of soil moisture, structural development, and yield of small grain. Colo. (A)

Effects of types of cultivation upon moisture and nitrates in the soil. Ark.

Effect of organic matter on the moisture equivalent. Calif.

Soil moisture and nitrate investigations.--To determine what effect various soil tillage methods have on accumulation of nitrate nitrogen and moisture in soil. (Moro Substation) Oreg.

Lysimeter investigations. Percolation for different soils and crops with approximately uniform applications of water. (Hermiston Substation) Oreg.

Lysimeter investigations. Percolation from same soil with same amounts of water with different cropping systems. (Hermiston Substation) Oreg.

Determination of critical moisture points for different soils.--To determine and measure any difference in the wilting point and time of irrigation for different crops and the factors affecting the same. Oreg.

SOILS--Soil Moisture. (Cont.)

A study of the moisture relations of California soils, with special effects on means of measuring and expressing critical contents of soil moisture. Calif.

Moisture conservation in northern Montana. (Northern Montana Substation) Mont.

Glacial water levels in Tompkins and Cayuga Counties. N. Y. Cornell.

Principles of soil moisture in relation to irrigation. (Davis Substation) Calif.

Studying concentration of soil solution and measuring forms of soil water. Mich. (A)

An instrument to readily measure the water-supplying power of the soil. N.C.

Soil Nitrogen.

A study of the nitrogen economy of the soil. Tenn. (A)

Forms of nitrogen. Ark.

A study of the soil nitrogen of a peach orchard. N. Y. Cornell.

Nitrogen economy of soil as influenced by additions of phosphorus, potassium and nitrogen. Ohio. (A)

Effect of nitrogenous fertilizers on nitrogen loss from the limed and unlimed soils. Tenn. (A)

The utilization of nitrogen in the presence of varying amounts of phosphoric acid and potash. N. J.

The effect of crop rotation, crop removals, and soil treatment upon the total nitrogen content of the soil. Ill.

The effect of methods of handling non-legume crop residues upon the maintenance of nitrogen and organic matter. Ill.

The relation of concentration of soil solution to nitric nitrogen in soils containing large quantities of available nitrogen, and its effect upon plant growth. N. M. (A)

SOILS--Soil Nitrogen. (Cont.)

Relation of weather, cultural practices, and soil conditions to nitrification in Nebraska soils. Nebr.

The conditions affecting the physiology of the process of nitrification. Ohio. (A)

To study effect of organic matter on bacterial activity and accumulation of nitrates in soils. Oreg.

Nitrate production in a soil as affected by the crop and cultivation. Mo.

Study of conditions which favor the development and control of nitrates in the soil. Mont. (A)

The determination of nitrates formed after corn, tobacco, hemp, soy beans and oats. Ky.

Formation of nitrates in soil during and after the growth of timothy, clover, corn, and oats, as determined by analysis of the leachings. N. Y. Cornell.

Influence of time of plowing under sweet clover on nitrate accumulation and crop production. Ill.

The effect of different cover crops or green manures when plowed under in the formation of nitrates in soils. N. Y. Cornell.

Soil fertility experiments.--Effects of type of cultivation upon moisture and nitrates in the soil. Ark.

Soil moisture and nitrate investigations.--To determine what effect various soil tillage methods have on accumulation of nitrate nitrogen and moisture in soil. (Moro Substation) Oreg.

Arkansas Valley nitrate control. Colo.

Studies of the presence, character, and possible source of nitrogen in the waters and soils of Arizona, as related to leguminous vegetation. Ariz. (A)

The effect upon the maintenance of nitrogen for crop production of kind of legumes. Ill.

SOILS--Soil Nitrogen. (Cont.)

Study of nitrogen balance in legume and non-legume rotations. N. Y. State.

To measure the nitrogen balance in soil under alfalfa and timothy grown continuously, and under certain crop rotations. N. Y. Cornell.

Determination of fixation of nitrogen by non-symbiotic bacteria. Ky.

The effect upon the maintenance of nitrogen for crop production of the activity of non-symbiotic nitrogen-fixing organisms. Ill.

Fixation of nitrogen in Colorado soils (in relation to the growing of potatoes in the Greeley section). Colo. (A)

The influence of nutrition on nitrogen fixation by Azotobacter Chroococcum. Ohio. (A)

Organic nitrogenous compounds of peat soils--the effect of lime on muck and peat soils. Study of the quantitative relationship between glutamic and aspartic acids and the acid amide nitrogen, and isolation of individual nitrogenous compounds. Mich. (A)

The quantities, forms, and sources of nitrogen and sulphur contained in the rainfall at Ithaca. N. Y. Cornell.

Soil Phosphorus.

Phosphorus relations of soils and plants. Wis. (A)

Fixation of phosphoric acid in soils. Va.

Comparative solubility of soil phosphorus after treatment with rock and acid phosphates. Ill.

A study of the influence of different methods of farming on the phosphorus content of the soil, and of the conditions which influence the availability of the phosphorus in crops. Wis. (A)

Soil Physics.

Soil coefficients. Ala.

The effect of lime on the physical properties of the soil. Nebr.

Relationship between heat of wetting, moisture equivalent, and unfree water. Mich. (A)

SOILS--Soil Physics. (Cont.)

A study of the hourly and daily fluctuations in the temperature of the soil. Records at different depths under bare and cropped surfaces. Md.

To determine the soil temperatures at the Michigan Agricultural College temperature station throughout a series of years. Mich.

Relation of soil temperature to soil parasites and other organisms, including cabbage yellows, flax wilt, tomato wilt, potato Rhizoctonia, and legume tubercles. Wis. (A)

An investigation of the character of the colloids of Missouri clay soils. Mo. (A)

Study of colloidal swelling of dry soil when wetted. Ariz. (A)

Volume weight of field soils. Ill.

Soil Potash.

Potassium supply of soils as affected by fertilizer treatment and cropping. Ohio.

A study of the availability of soil potash with the object of developing a system of diagnosis for the soils of the State. Mass. (A)

An investigation of the factors affecting the availability of the potassium compounds of the soil. Md.

Cause of apparent low content of available potash in soils giving feeble response to potash fertilizers as shown by the usual analytical methods. Ga. (A)

Soil Sterilization.

Steam sterilization of greenhouse soils.--To determine a better method of steam sterilization of greenhouse soils than the ones now practiced. Ind.

The effect of heating soils on germination and plant growth and the development of disease in heated soils which have become reinfested. Wis.

SOILS--Soil Sulphur.

Sulphur in plants and soils and its significance to permanent soil fertility; also, determination of the best sulphur compound for correcting sulphur deficiency in soil. Ky. (A)

To determine the effect of sulphur composted in arid and humid soil at different rates. Oreg.

Isolation of pure cultures of organisms capable of oxidizing sulphur compounds in soil and solution. N. J. (A)

To study the losses and gains in soil sulphur from rainfall and drainage. Oreg.

Influence of lime and magnesia on conservation of soil sulphur. Tenn. (A)

To determine the ultimate effect of long continued use of sulphur on soil acidity and fertility, used since 1912 and 1915. Oreg.

The quantities, forms, and sources of nitrogen and sulphur contained in the rainfall at Ithaca. N. Y. Cornell.

Sulphur in the acid soils of western Oregon.--To determine the sulphur content of the predominating soil types of the Willamette Valley and the amount of sulphur they receive annually in the rainfall. Oreg.

The need of Texas soils for sulphur. Tex.

Sulfonation in soils. Iowa.

Soil Surveys.

Soil survey of the Auburn area. Calif.

Soil survey of Big Valley. Calif.

Soil survey of the Bishop area. Calif.

Soil survey of Brawley area. Calif.

Soil survey of the Coachella Valley area. Calif.

Soil survey of the Eureka area. Calif.

Soil survey of the Gilroy area. Calif.

SOILS--Soil Surveys. (Cont.)

Soil survey of the Hollister area. Calif.

Soil survey of the King City area. Calif.

Soil survey of the Lancaster area. Calif.

Soil survey of the Palo Verde Valley area. Calif.

Soil survey of the Victorville area. Calif.

Soil survey and land cover studies of selected areas in Connecticut.
Conn. State.

Soil survey. A detailed survey of a designated area each season as funds permit. Idaho.

State soil survey. (mapping) Ill.

Soil survey of Indiana.--To determine and accurately map the various soil types of the State, including the making of chemical analyses and a detailed description of each soil type, together with a discussion of the fundamental methods practiced, and the general agricultural adaptation of the particular soil type. Ind.

Soil survey of Iowa. Iowa.

An investigation to determine the plant food content and the acidity of each type of soil in each of the counties of Iowa. Iowa.

Soil survey of Phymouth, Harrison, Clarke and Appanoose Counties.
Iowa.

Soil survey of the State. Md.

Systematic study of Michigan's soils, including soil classification, mapping, composition, topography, erosion, present state of productivity, land utilization, and recommendations for soil improvement.
Mich.

Soil survey. Minn.

The determination and mapping of Missouri soil types. Mo.

SOILS--Soil Surveys. (Cont.)

Soil survey studies. Mont.

Soil reconnaissance. Mont.

Soil survey of the State.--To map and establish the boundaries of the different types of soil occurring in the several counties of the State. N. C.

Soil survey. Oreg. Tex. Utah. Ill.

Outlining soil areas. S. D.

Mechanical analysis of important soil types. Conn. State.

To ascertain whether the composition of a soil type, as now classified, is fairly uniform and characteristic. N. Y. Cornell.

Chemical composition of North Carolina soils.--To determine the chemical composition of soil survey samples and the relation between soil type and chemical composition. N. C.

The chemical analysis of North Dakota soils.--To analyze all soil samples submitted by the director of the soil survey. N. D.

Physical and chemical analysis of soil types. S. D.

Soils of the low-lime area. Minn.

Soil Types.

Peat soils. Minn.

A study of various methods of preparing peat for use as barn litter. (North Central Sanitation, Grand Rapids) Minn.

The peat soils of Idaho. Idaho.

Subsiding and compacting of peat lands.--To determine the degree and rate of subsidence of the peat lands of the Sacramento-San Joaquin Delta. Calif.

SOILS--Soil Types. (Cont.)

Organic nitrogenous compounds of peat soils. The effect of lime on muck and peat soils. Study of the quantitative relationship between glutaminic and aspartic acids and the acid amide nitrogen and isolation of individual nitrogenous compounds. Mich. (A)

Muck soil studies.--To determine the factors limiting crop production on the muck soils of eastern North Carolina and to develop better methods of management. N. C.

Unproductive muck, its cause and correction. N. Y. Cornell.

Field and laboratory investigations with muck soils. Mich.

Fertilizer on muskeg for garden crops. (North Central Substation, Grand Rapids) Minn.

Experiments on muskeg soils, Liming native muskeg.--To study the effect of limestone and quicklime upon the native vegetation of Muskeg land and to determine the value of such applications as a factor in preparing muskeg land for cultivation. (North Central Substation, Grand Rapids) Minn.

Forest soils study. Conn. State.

Timber soil investigations. Idaho.

Studies of the tight clay layer in the soils of the level prairies of Missouri.--To determine the materials and conditions responsible for the tight clay layer which underlies the level prairies, particularly in the northeastern and southwestern portions of Missouri, and to find, if possible, some means of lessening its influence upon the productivity of these soils. Mo.

A study of the effect of lime and organic matter on the impervious Kirkland upland soil. Okla. (A)

Soil correction trials. Crops, fertilizers, and cultural treatment for "black sticky land." Oreg.

Laboratory and greenhouse study of "tight clay" subsoil. Ill.

Sandy soils. Minn.

Fixing of shifting sands. Mich.

Plant composition as influenced by variations in soil type. Wash.

SOILS--Soil Types. (Cont.)

Plant composition as influenced by variations in soil type. Wash.

"Push" soil investigations. Iowa.

To ascertain whether the soil type, as now distinguished, is an index to the fertilizer needs of a soil. N. Y. Cornell.

Physical studies of rice lands. A study of the character of the soils used for rice production, with particular reference to any changes in physical condition that might be due to continual submergence incident to rice culture. Calif.

Parallelisms between glacial and loessial soils of southeastern Nebraska. Nebr.

Plant composition as influenced by variations in soil type. Wash.

Pot culture studies of the fertilizer requirements of different soil types. Md.

Soil management and fertilizer investigations. The upbuilding of fertility of the more important soil types. Md.

Tillage as Related to Fertility and Productivity.

Cultural methods. Utah.

Methods of cultivation. (Worland) Wyo.

Tillage methods and moisture conservation. (Judith Basin Substation) Mont.

Tillage practices under semi-arid conditions. (Adams and Waterville Substations) Wash.

The principles of intertillage. A study of the effects of cultivation on soil moisture, root development, and yields of vegetables. N. Y. Cornell.

Time and method of intertillage. Tex.

Tillage experiments. Different methods and time of plowing. (More Substation) Oreg.

SOILS--Tillage as Related to Fertility and Productivity. (Cont.)

Tillage investigations. Time and method of plowing. Oreg.

Depth of plowing test.--To determine the effect on the growth of crops on peat soils. (Menona Substation) Minn.

Depth and time of plowing experiment on brown silt loam. Ill.

Tillage tests.--Comparison of depths of tillage. S. Dak.

Comparative effect of various depths of tillage upon crop yields and upon the ultimate condition of the soil. S. Dak.

Depth of plowing experiment on gray silt loam on tight clay. Ill.

Depth of plowing in Gallatin Valley bench land. Mont.

Soil fertility experiments. Effects of type of cultivation upon moisture and nitrates in the soil. Ark.

Cultivation-weed experiment.--To study the effect of weeds growing unmolested, killing weeds by scraping but producing no mulch, and shallow cultivation with both blade and level cultivator on the yield of crops, particularly corn, both with and without the "standard fertility" treatment. Ill.

A study of the effect of stirring soil on moisture content, oxidation, nitrification, and crop yield. S. C. (1)

Time and method of seed bed preparation. Tex.

Effect of cultivation. Ark.

Field crop investigation under both dry farming and irrigation. Tillage experiments with wheat, oats, barley, rye, field peas, corn, alfalfa, sunflowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

Soil tilth. Nebr.

Tillage experiments. Different methods of handling the summer fallow for wheat production. (Moro Substation) Oreg.

The influence of continuous fallow on the chemical composition of the soil. I. J.

SOILS--Tillage as Related to Fertility and Productivity. (Cont.)

Fallow experiments with cane land.--To conserve soil moisture and to determine the effects of this practice upon the yield of cane and the production of sugar. Virgin Islands.

Orchard tillage experiments. N. Y. Cornell.

^{V.}
Furrow drill, ordinary drill in northern Montana. (Northern Montana Substation) Mont.

Summer fallow experiment (at Akron). Colo.

The paper mulch. A study of the effect of covering the surface of the soil with a layer of paper. Calif.

Paper mulch experiment with sugar cane.--To determine the influence of a paper mulch applied on cane land before planting the crop on the total yield of sugar produced. Virgin Islands.

FERTILIZERS.

(See also SOILS-- Soil Fertility and BOTANY-- Plant Nutrition.)

Fertilizer Experiments, General (See also FIELD CROPS - specific crops and Rotations.)

Crop rotation and fertilizer studies.--To determine the relative merits of several different crop rotations and to compare different systems of fertilisation, including commercial fertilizers and farm manures. Ind.

Crop rotation and soil fertility experiments. Tests of crop rotations, commercial fertilizers, and manure. Kans.

Crop experiments.--To make comparative studies of various rotations and fertilizer applications in regard to their effect upon crop and soil. Nebr.

The use of gypsum, manure, rock phosphate, acid phosphate, sulphate of potash, and the last two in combination and the use of lime with all of the above combinations on alfalfa. (West Central Substation, Morris) Minn.

Complete commercial fertilizers, including treatment with nitrogen, potash and phosphate, combined and alone, at different rates. (3-yr. rotation.) (North Central Substation, Grand Rapids) Minn.

The use of standard carriers of nitrogen, phosphorus, and potassium singly, in combinations of two elements, and the three together in different proportions and amounts, in various crop rotations and in continuous culture. Ohio.

Comparisons of different carriers of nitrogen, phosphorus and potassium. Ohio.

General comparative fertilizer tests at the Pee Dee and Coast Stations, with corn, cotton, and small grain. S. C.

General comparative fertilizer tests on the various soil types in South Carolina conducted in cooperation with farmers. S.C.

General comparative fertilizer tests. S.C.

Fertilizer ratio experiment, "triangle experiment." N.J.

Liming and fertilizer experiments. (Columbia Substation) Tenn.

A field experiment to compare an extra high-grade fertilizer (3-16-3) with an equivalent amount of a standard fertilizer (4-8-4). N.J.

Tests with commercial fertilizers. Idaho.

Commercial fertilizers v. stable manures. Ohio.

Fertilizer v. manure. R. I.

FERTILIZERS--Fertilizer Experiments, General. (Cont.)

Tests of commercial fertilizers with and without manure. (Astoria Substation) Oreg.

Fertilizers. The results farmers may expect from the long-continued use of the more common commercial fertilizers, particularly acid phosphate. Ohio.

Fertilizer in non-manure rotations. R. I.

Fertilizer as a supplement to manure and green manure. R. I.

Test of theoretical amount of fertilizer compared with popular formulas. S.C.

The comparative profits of equal investments in phosphorus, in phosphorus and potassium, and in phosphorus, potassium, and nitrogen. Ohio.

Fertilizer plat studies. Fertility studies on 10+ one-tenth acre plats, at Geneva. N. Y. State.

To determine the kind and amount of fertilizer most profitable on different soils, using rotations common to each section. (Statesville, Kingsboro, Swannanoa, Willard and Wenden Substations) N. C.

Experiments to determine the time of application of fertilizers and the amount to use. Iowa.

Fertilizer investigations on muck land. Oreg.

Study of residual effects of fertilizers. Mass.

Top-dressing experiments. (Staunton Substation) Va.

Fertilizer experiments. (Crookston, Grand Rapids, Duluth and Waseca Substations) Minn., (Delta Substation) Miss., Oreg.

Fertilizer experiment. Pa.

Cooperative fertilizer tests. Miss.

Cooperative fertilizer experiments. Ark., Nebr.

Combination fertilizer and rotation experiments. Ark.

Influence of certain fertilizer treatments on (a) growth, (b) carbohydrate production, and (c) nitrogen production. Mich.

Fertilizer experiments on the chief soil types of the State. Oreg.

Fertilizer rotation experiments. Ala.

FERTILIZERS--Fertilizer Experiments, General. (Cont.)

Pot experiments with commercial fertilizers, the percolation water from the pots being analyzed. (Hermiston Substation) Oreg.

Fertilizer and soil studies in the greenhouse. Ohio.

Ecological study of the effect of fertilizers on plants. Ohio.

Pot culture studies of the fertilizer requirements of different soil types. Md.

Manuring Gallatin Valley bench lands. Mont.

The influence of fertilizers on the natural vegetation of land abandoned to weeds and grass. N. J.

Borax.

Quantitative borax test in connection with potash fertilization.-- To determine the extent to which borax in fertilizer may be injurious under different methods of application in ordinary field practice. Ind.

Green Manures.

Experiments with green manure crops. Del.

Experiments in forage, green manure, and winter cover crops.-- To determine the best use of rye, winter vetch, sweet clover, the common clovers, and alfalfa, for forage, green manure and winter cover crop purposes. Md.

Studies in the utilization of crop residues. Ill.

Effect of green manuring on the soil. Va. (A)

Experiment to determine best green manure crops for this section. (Martinsville Substation) Va.

Studies of green manure crops for maintaining humus in vegetable production.-- To determine the best green manure crops to plant under various cropping systems and at different times. N. Y. Cornell.

The fertility value of legumes at various stages of growth. Ill.

Winter legumes as cover crops and green manures preceding human food crops. R. I.

The effect of several leguminous green manures on the following tilled crop, especially potatoes. John. Storrs.

Alfalfa, sweet clover, red clover, vetch, as green manures for different human food crops. R. I.

Red clover, sweet clover and vetch as green manure for early tomatoes. R.I.

FERTILIZERS--Green manures. (Cont.)

Green manuring experiments, including crimson clover, hairy vetch, rye, red clover, and alsike clover. Md.

Determining sweet clover plants per acre, their average height and amount of dry matter per acre when spring plowed as a green manure crop. Ill.

Green manuring experiments, including cowpeas, soy beans and buckwheat. Md.

Green manuring experiments with cowpeas, to determine the effect of cowpeas when turned under on nonlegumes immediately following. (Jackson Substation) Tenn.

Oats, rye and wheat as green manure for celery. R. I.

What is the value of straw and of vetch and oats green manure as compared to manure. Oreg.

Comparative growth of green manure crops after the middle of July. R.I.

Green manure v. stable manure. R. I.

Comparative value of barnyard and green manures. (Hermiston Substation) Oreg.

Fertilizer as a supplement to manure and green manure. R.I.

Barnyard and green manures in the Judith Basin crop rotation. Mont.

Barnyard and green manures in northern Montana crop rotations. Mont.

Barnyard and green manures in the Yellowstone Valley. (Huntley Substation) Mont.

Bacteriological effect of green manures on a typical Mississippi soil. Miss.

Lime. (See also SOILS--Acidity--Soil Reaction; Liming.)

Liming and fertilizer experiments. (Columbia and Fentress County Substations) Tenn.

Limed v. not limed crops. Ala.

A study of the influence of lime on crops. Pa.

The effect of lime on legumes. Ark.

Relation of limestone to type of crop. Oreg.

Relative influence of lime on different crops. R. I.

Lime studies.--To determine whether crops can be successfully grown with lime and phosphates alone. N.C.

FERTILIZERS--Lime. (Cont.)

- The use of lime.--To determine the amount and form of lime that will give the best results. (Starkville and Holly Springs Substations) Miss.
- Comparisons of different amounts of burnt lime and burnt dolomite, with limestone and dolomite separates. Tenn.
- A study of the efficiency of small amounts of lime and a comparison of lime in quick and hydrated forms, mash and ground limestone. Wis.
- Calcium compounds: forms, amounts, and when best applied. Ohio.
- A comparison of different forms of lime. (Crossville Substation) Tenn.
- A field comparison of various forms of lime; also rate of liming experiments. Tenn.
- Forms of lime.--To study the effect of various forms of lime on yield, both as to their immediate and accumulative effect. Ark.
- Lime studies. The use of lime in a standard crop rotation for this region, different forms of lime, effects of the fineness of grinding on value of limestone. Va.
- Rate-of-liming experiments. (Crossville Substation) Tenn.
- Rates of liming experiment. (Martinsville and Holland Substations) Va.
- Rate-of-liming experiments with (a) burnt lime and (b) ground limestone. A complete series for both red clover and alfalfa. (Murfreesboro Substation) Tenn.
- Lime trials with different rates and forms on six leading acid soil types in Western Oregon. Oreg.
- Lime studies on peat soils.--To determine the kind and amount of lime to use on peat soils. N.C.
- Residual influence of a single application of limestone. Ill.
- The use of different quantities of ground limestone in the growing of alfalfa. N.J.
- Light application of limestone compared to heavy application. Ill.
- Light application of limestone compared with heavy application on land which has received no lime since 1902. Ill.
- Limestone studies. (a) Effect of fineness of limestone upon soil acidity and crop growth. (b) Comparative effects upon soil acidity and crop growth of different forms of limestone and of limestone of different geological origin. Ill.
- Field test of the value of limestone of different degrees of fineness. Pa.
- Comparison of different degrees of fineness, different amounts, and different forms of limestone and burnt lime. Ill.
- Comparison of the relative efficiency of limestone particles of different degrees of fineness. N.Y. Cornell.

FERTILIZERS--Lime. (Cont.)

Calcium v. magnesium limestone. Md.

Calcium v. magnesium compounds. Chic.

A study of magnesian and non-magnesian limestone as a factor in crop production. N. J.

Lime-magnesia-silica studies in concrete frames. Tenn.

Decomposition of calcium and magnesium carbonates in soils under field conditions, including drainage investigations. Tenn.

Calcic and magnesian hydrates and limestones compared at or near the neutral point of the soil for chlorosis observations. R. I.

Agricultural value of marl. Minn.

Marl handling.--To make marl available for agricultural use. Mich.

The effect upon texture and tilth of marl applied from 0 to 16 tons per acre. (Northwest Experiment Substations, Crookston) Minn.

Effect of lime on the availability of phosphorus in different carriers. R. I.

The effect of lime with and without fertilizers and manure. (Ridgley Substation) Md.

The value of lime, gypsum and phosphate as fertilizers. (Sandpoint Substation) Idaho.

Manure.

Experiments in the use of barnyard manure. (Tribune Substation) Kans.

Manure as a fertilizer for major crops. (Hermiston Substation) Oreg.

Comparative value of barnyard and green manures. (Hermiston Substation) Oreg.

Green manure v. stable manure. R. I.

Fertilizer v. manure. R. I.

Cow manure with straw bedding v. sawdust bedding, and the latter supplemented with phosphorus or potassium. Value of the manure compared with the cost of fertilizers. R. I.

What is the best way to work manure into the soil? Oreg.

Manure economy tests. Mass.

What is the most economic rate of use of farm manure on major field crops? Oreg.

FERTILIZERS--Manure. (Cont.)

- Rate of manuring. (Northeast Demonstration Farm, Duluth) Minn.
- The use of manure in different amounts per acre and with different supplements. Ohio.
- How long will manure last, applied under our soil and climatic conditions? Oreg.
- Will it pay to reinforce manure with phosphates, ground limestone, or sulphur? Oreg.
- Fertilizer as a supplement to manure and green manure. R. I.
- Relation of the use of manure to potash fertilization. Wis.
- Chemical changes in fermenting manures and influences of such fermentation on the solubility of crude compounds of phosphorus, potassium and nitrogen, when mixed with manure. Wis.
- The decomposition and preservation of manure. N. Y. State.
- Studies in housing livestock for efficient handling and preservation of manure. Oreg.
- What is the value of straw and of vetch and oats green manure as compared to manure. Oreg.
- A study of upland soil. Peat as a fertilizer on upland soil.--To compare the raw peat with stable manure as an organic fertilizer. (North Central Substation, Grand Rapids) Minn.
- Barnyard and green manures in the Judith Basin Crop rotation. Mont.
- Barnyard and green manures in northern Montana crop rotations. Mont.
- Barnyard and green manures in the Yellowstone Valley. (Bartley Substation) Mont.

Nitrogen.

- Availability of various amounts of nitrate. Minn.
- (a) Availability of different nitrogenous fertilizers with and without lime and lime and green manure, (b) Influence of manure with and without lime, (c) Influence of manure on denitrification, (d) Nitrogen losses and gains. (Cylinder and field experiments.) N. J.
- Nitrogenous fertilizer experiment.--To determine the relative value of various carriers of nitrogen. N. C.
- Comparison of different carriers of nitrogen, phosphorus and potassium. R. I.
- Comparative tests of nitrogenous fertilizers at the Coart and Pee Dee Stations. S. C.

FERTILIZERS--Nitrogen. (Cont.)

A comparison of nitrate of soda with sulphate of ammonia in coffee fertilization.--To determine if sulphate of ammonia will be effective in increasing coffee yields where nitrate of soda has failed to do so, to show the difference in effect on growth and to investigate the reasons for the same. Porto Rico.

Rates and time of applying sulphate of ammonia and nitrate of soda. Ark.

A comparison of nitrate of soda, ammonium nitrate, ammonium phosphate and urea. N.J.

The value of different carriers of plant food ingredients. Nitrate of soda and sulphate of ammonia with more and less lime; nitrate, sulphate, cyanamid, and manure for grass top-dressing, nitrate, blood, hoof meal, horn meal, star fish, hen manure, tankage and acid fish in sunken pots with more and less lime, with and without cover crop. R.I.

A study of the relative availability of nitrate nitrogen, legume green manure nitrogen and stable manure nitrogen. (Cylinder experiment) N.J.

Calcium cyanamid v. nitrate of soda or ammonium sulphate as fertilizer. Ala.

Cotton seed v. cottonseed meal as a fertilizer. Miss.

Phosphorus.

Sources of phosphorus. Ark.

Study of phosphate carriers. N.C.

A field test of different carriers of phosphorus. Pa.

Comparison of different carriers of nitrogen, phosphorus and potassium. R.I.

Field experiments with high grade acid phosphate. Iowa.

Phosphate fertilizer tests. (Northeast Substation, Duluth) Minn.

Comparative tests of phosphate fertilizers. S.C.

Fertilizer experiments.--To determine the relative efficiency of different phosphates and the effect of sulphur on roses and carnations. Ill.

Phosphate studies.--To work out the relative efficiencies of acid phosphate, soft phosphate, rock phosphate, and basic slag on the different soil types of the State. (Willard, Swannanoa, Wadesboro, and Statesville) N.C.

Relative availability of different natural phosphates, acid phosphates, and reverted phosphates. Ga. (A)

High analysis phosphate (40 per cent P_2O_5) vs. 16 per cent acid phosphate. Ohio.

FERTILIZERS--Phosphorus. (Cont.)

Comparison of acid phosphate v. raw phosphate. Ala.

Acid phosphate compared with 200 mesh rock phosphate. Ill.

Cullers' rotation of crops, including tests of rock v. acid phosphate. Ala.

Phosphate experiment. Comparing the value of rock phosphate against acid phosphate on continuous corn and crimson clover. (Swannanoa Substation) N.C.

Raw rock phosphate compared with steamed bone meal in a grain and in a live stock system of farming, and with combinations of limestone and potash. Ill.

The value of lime, gypsum and phosphate as fertilizers. (Sandpoint Substation) Idaho.

Determination of the relative values of different forms of phosphorus upon the soil at Columbia.--To determine the availability, the value and the effect upon both soil and crop of the phosphorus as supplied in a number of phosphorus carriers. Mo.

Availability and utilization of phosphorus compounds for crop use, on the hillsoils of Oregon; what forms of phosphate fertilizer will give best results; what practices will make the insoluble phosphate fertilizers available to crop use; what practices will make phosphate compounds of these soils more available; what differences there may be in feeding power of crops for rather insoluble phosphates. Oreg.

A comparison of the effect of forms of phosphorus in an ordinary crop rotation and in connection with other soil treatments. S. Dak.

Source of phosphorus tests for winter legumes. Ala.

Comparison of different amounts of rock phosphate with different legumes. Ill.

Acid and rock phosphate both with and without limestone. Ill.

Comparison of different carriers of phosphorus both with and without limestone. Ill.

Comparison of acid phosphate and rock phosphate on different types of soil with and without lime treatment. (Cylinder experiment) N.J.

An attempt to determine the reason for the superiority of limestone and acid phosphate over limestone and rock phosphate in crop production on certain types of soil. Ky.

Acid, rock, and superphosphate compared both with heavy application and light application of limestone. Ill.

Comparison of different amounts of acid and rock phosphate, with a minimum amount of limestone. Ill.

The value of different carriers of plant-food ingredients.--Acid phosphate floats, double or triple superphosphate, Thomas slag, and bone, with or without lime. R.I.

FERTILIZERS--Phosphorus. (Cont.)

Comparison of different carriers of phosphorus, on light and heavy limed land. Ill.

The comparative value of rock and acid phosphate with and without limestone, and bone meal with limestone, in livestock and grain systems of farming. Ill.

Comparison of acid and rock phosphate, in connection with residues and limestone. (Elizabethtown field) Ill.

Comparison of sulphur-phosphate mixture with acid phosphate and rock phosphate. (Cylinder experiment) N.J.

To determine the value of sulphur and manure in liberating unavailable phosphates. Oreg.

A study of upland soil.--To compare acid phosphate with rock phosphate, with and without manure. (North Central Substation, Grand Rapids) Minn.

A field study of rock phosphate and Carrington loam to determine the relative value of this fertilizer when applied with manure or green manure at the rate of 500 lbs., 1,000 lbs., 1,500 lbs., and 2,000 lbs. per acre. Iowa.

Phosphate experiments.--To compare the availability of the phosphorus in raw ground phosphate rock with acid phosphate, when used with green manures. Md.

Effect of sulphur on availability of phosphorus in bat guanos.--To compare the effect of sulphur on the availability of phosphorus in bat guanos, attention being paid to form of nitrogen supplied. Porto Rico.

Effect of lime on the availability of the phosphorus of acid phosphate. N.Y. Cornell.

Factors governing the availability of rock phosphate in acid soils. Ark.
(A)

Relative value of different amounts of phosphoric acid on Dekalb soils. Pa.

The residual effect of raw rock phosphate and acid phosphate on crop production. N.Y. Cornell.

The fineness of subdivision of rock phosphate as a factor in its effectiveness in crop production. Ill.

To determine the effect of phosphorus in different forms on the growth of plants and the effect of sulphur in combination with calcium (gypsum calcium sulphate) and as pure sulphur on the growth of plants and its effect on the availability of phosphorus in different forms. S.Dak. (A)

FERTILIZERS—Phosphorus. (Cont.)

A study of the effect of gypsum on the availability of rock phosphate.
(Carthage Field) Ill.

Composting commercial organic ammoniates, ground raw phosphates, and rich soil as affecting the solubility of the phosphates and the loss of nitrogen from the ammoniates. Ga. (A)

Composting raw phosphate rock and sulphur with different soils. Tex.

Experiments to determine the value of bat guano as a fertilizer. Mo.

Potash.

A study of the value of the various potash fertilization materials.--To determine the relative value of various domestic potash materials compared with standard German potash salts, such as muriate of potash, as sources of potash fertilization. Ind.

Test of the sources of potash fertilizers. S.C.

Comparison of different carriers of nitrogen, phosphorus and potassium. R.I.

Chlorides and carbonates of potassium and sodium with more and less lime.
R.I.

Effect of potassium and the other ingredients of muriate, sulphate, kainit, and magnesium-potassium sulphate. R.I.

Potassium bearing minerals as a source of potassium for plants. Ill.

Availability of potash in common potash-bearing minerals. A study of the factors governing the availability of the potash contained in the common potash-bearing minerals of North Carolina soils. N.C.

Relation of the use of manure to potash fertilization. Wis.

Sulphur. (See also BOTANY—Plant Nutrition.)

Comperative sulphur experiment.--To determine the effect of the addition of sulphur to the soil on its acidity and on potato scab (Oospora scabies)
K.Dak.

To determine the value of sulphur and sulphate, used in connection with lime, in humid sections. Oreg.

Effect of sulphur and sulphates on soils and plant growth. Ohio.

Function of sulphur as a plant food. Wash. (A)

FERTILIZERS--Sulphur. (Cont.)

Relation of sulphur to soil fertility and plant nutrition. Ill.

To determine the value of sulphur on various crops and on different soil types. Oreg.

To determine the effect of sulphur on the yield of alfalfa. (Aberdeen Substation) Idaho.

Sulphur as a fertilizer for Wyoming soils. Wyo.

To determine the value of sulphur and gypsum and aluminum sulphate, used in connection with sweet clover in restoring the structure of drained alkali land. Oreg.

Miscellaneous.

The availability of activated sludge fertilizer and its suitability for agricultural purposes. Wis.

FIELD CROPS.

General.

Cooperative agricultural work. Okla.

Cooperative experiments with field crops. Including oats, wheat, barley, Hubam clover, Ames amber syrup sorghum, Sudan grass, soy beans, timothy, and seed certification. Iowa.

Crops relation experiment. (Bowling Green Station) Va.

Farm crop production investigations. Experiments in outlying fields. (Northeast Experiment Station, Duluth) Minn.

Rate of sowing farm crops. Oreg.

Tillage investigations. Time of sowing in fall and spring. Oreg.

Studies in crop cultural methods.--To determine the best method, rate, and distance of planting for various important crops. Ind.

Cultural methods for field crops. (South Mississippi Substation) Miss.

Cultural tests for different field crops for the Delta. (Delta Substation) Miss.

A test of 20 different crops and crop combinations used as catch crops at last cultivations or after corn harvest. Ohio.

Study of fertilizer effects on crop yields. Del.

FIELD CROPS--General. (Cont.)

- Fertilizer tests for field crops. (South Mississippi Substation) Miss.
- New or uncommon crop investigations. Iowa.
- Cover crop experiments. W. Va.
- High altitude crops. Colo.
- Increase of pure seed of standard varieties (field crops). (Judith Basin Substation) Mont.
- The correlation between differences in crop growth on differently fertilized soils in the field and under greenhouse conditions. Ky.
- Amount and rate of growth of certain field crops as influenced by environmental and other factors. N.J.
- Establishing standard grades of all field crops not yet standardized. N.C.
- Agronomical plant collection. Calif.
- Agronomical seed collection. Calif.
- Studies in plat technique. Conn. Storrs.
- Methods of conducting farm crop experiments. Ga.
- Methods of harvesting test plats.--To study the accuracy of records secured by harvesting a portion of a plat in comparison with the yields secured from the entire plat. Md.

Adlay.

- Adlay adaptability test.--To determine the possible local adaptability of various varieties of adlay. Guam.

Alfalfa.

- Genetical studies in alfalfa.--Studies from the F₂ plants from the cross Medicago sativa X M. falcata. N.Dak. (A.)
- A study of heritable characteristics in pure lines of alfalfa. Ariz. (A.)
- Alfalfa inheritance in hardiness.--To obtain data as to the genetics of hardiness in alfalfa and thereby to lay a foundation for future practical breeding operations. N.Dak.
- Inheritance of seed color in hardy alfalfas and sweet clover. Mont. (A.)
- Alfalfa breeding. Mich.
- The breeding and testing of pedigreed strains and types of alfalfa. West Central Substation, Morris) Minn.

FIELD CROPS--Alfalfa. (Cont.)

Practical alfalfa breeding.--To secure a variety at least as hardy as the Grimm variety which can be easily distinguished from all other varieties. N. Dak.

Breeding alfalfa adapted to sandy soil. (Spooner Substation) Wis.

A study of the effect of inbreeding in smooth brome grass (Bromus inermis) and alfalfa (Medicago sativa). N.Dak. A.

Alfalfa improvement by selection. Wyo.

Alfalfa variety tests. (Holly Springs Substation) Miss.

Alfalfa investigations. Variety test of alfalfa. (North Central Station, Grand Rapids) Minn.

Variety tests of alfalfa. (Lightfoot Station) Va.

A test of the different species and varieties of alfalfa. Pa.

A study of varieties and strains of alfalfa. Ark.

Alfalfa variety test.--To compare some of the more common varieties of alfalfa now found on the market with native-grown alfalfa and to ascertain if any of these much-talked-of strains are better suited to the irrigated valleys than those now being grown. N. Mex.

Alfalfa variety test.--To determine the variety of alfalfa best adapted to local conditions. (Dickinson Substation) N.Dak.

A study of the adaptation of the important types, varieties and regional strains of alfalfa. Mich.

Alfalfa varieties in the Gallatin Valley. Mont.

Alfalfa varieties in the Judith Basin. Mont.

Alfalfa varieties in northern Montana. Mont.

Alfalfa: A comparison of Grimm and Kansas common for yield and hardiness. Ohio.

Studies of behavior of alfalfa.--A study of alfalfa varieties for yields, quality of hay, and adaptation. (Kearney Park) Calif.

Alfalfa variety tests.--To find hardy alfalfas for pasture and hay. Alaska.

Variety tests of alfalfa, for hay and for seed. (Hermiston Substation) Oreg.

Variety tests of cereals and alfalfa. S. Dak.

FIELD CROPS--Alfalfa. (Cont.)

Varieties of alfalfa and date of seeding. Ill.

Alfalfa experiments. (a) Tests of strains and varieties, (b) tests of fertilizers, manure, and lime, (c) relation of acidity (H-ion concentration) to growth, (d) methods of seeding. Conn. Storrs.

Fertilizers for alfalfa. (Holly Springs Substation) Miss.

Fertilizer experiments with alfalfa. (Lightfoot Station) Va.

Alfalfa fertilizer tests.--To study (a) the effect of fertilizers, especially phosphorus carriers, on yields of alfalfa, (b) the possibility of increasing the yield in old established alfalfa fields by application of commercial fertilizers. N. Mex.

Fertilizer and liming experiments with alfalfa. (Murfreesboro Substation) Tenn.

Tests of different kinds of lime on alfalfa. (Ridgely Substation) Md.

Rate-of-liming experiments with (a) burnt lime and (b) ground limestone. A complete series for both red clover and alfalfa. (Murfreesboro Substation) Tenn.

To determine the advisability of manuring upland alfalfa. Okla.

Sulphur fertilizer for alfalfa. Miss.

To determine the effect of sulphur on the yield of alfalfa. (Aberdeen Substation) Idaho.

The residual effect of commercial fertilizers, with and without manure, on alfalfa. Northwest Substation, Crookston) Minn.

Culture tests with alfalfa. (Appomattox and Lightfoot Substations) Va.

Culture experiments with alfalfa and red clover. (Sandpoint Substation) Idaho.

Culture methods for alfalfa when used for (a) pasture, (b) hay production.-- To determine effect and value of various methods of handling alfalfa land to increase yields. Calif.

Cultivation of alfalfa in the Judith basin. (Judith Basin Substation) Mont.

Alfalfa investigations. Methods of planting alfalfa. (North Central Substation, Crookston) Minn.

v.

Alfalfa in rows/alfalfa sown broadcast. (Judith Basin Substation) Mont.

Alfalfa in cultivated rows in northern Montana. (North Montana Substation) Mont.

FIELD CROPS--Alfalfa. (Cont.)

Dates of planting alfalfa. (Northwest Substation, Crookston) Minn.

Rate of seeding alfalfa in the Judith Basin. (Judith Basin Substation) Mont.

Alfalfa investigations. Different rate of seed per acre. (North Central Substation, Grand Rapids) Minn.

Reseeding alfalfa in the Judith Basin. (Judith Basin Substation) Mont.

Reseeding alfalfa in northern Montana. (North Montana Substation) Mont.

Alfalfa as a cover and green manure crop. R.I.

Comparison of alfalfa, sweet clover and cowpeas and soy beans as hay crops. (Charlotte Court House Substation) Va.

Value of green and ripe seeds in alfalfa and sweet clover. Mont.

Hard seed of alfalfa. (a) Field test as to viability. (b) Laboratory germination tests of hard seeds. Colo.

Time of cutting alfalfa for hay. Iowa.

Effect of time of harvest upon the growth and yield of alfalfa. (Judith Basin Substation) Mont.

Effect of time of harvest upon growth and yield of alfalfa in northern Montana. (North Montana Substation) Mont.

Determination of the yield and quality of hay produced by cutting alfalfa when the first shorts appear, when one-tenth in bloom, and when in full bloom; also of the yield of hay following cultivation with the alfalfa cultivator and spring-tooth harrow, compared with no cultivation. Ill.

Alfalfa in the Judith Basin crop rotation. (Judith Basin Substation) Mont.

Alfalfa in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

Maintaining stands of alfalfa. Ark.

Alfalfa seed production in the Judith Basin. (Judith Basin Substation) Mont.

Seeding alfalfa and sweet clover with and without a nurse crop. (Northwest Substation, Crookston) Minn.

Alfalfa investigations. Nurse crop v. no nurse crop for alfalfa. (North Central Substation, Grand Rapids) Minn.

Nurse crops for alfalfa in northern Montana. (North Montana Substation) Mont.

FIELD CROPS--Alfalfa. (Cont.)

Miscellaneous tests with alfalfa in the Judith Basin. (Judith Basin Substation) Mont.

Alfalfa - brome grass mixtures. (Judith Basin Substation) Mont.

Alfalfa and brome grass on dry land in the Yellowstone Valley. (Muntley Substation) Mont.

Duty and effect of duty of water on alfalfa. N.Mex. (A.)

Relation of time and amount of irrigation to seed production with alfalfa and sweet clover. (Hermiston Substation) Oreg.

Irrigation of alfalfa. Calif.

Factors influencing the securing of a good stand of alfalfa. Effect of late and frequent cuttings. Conditions causing winterkilling. Comparison of hardiness of various varieties and strains. Seed production. Factors causing yellowing of alfalfa. Wis.

Vegetation house studies with alfalfa to be used as a check on the irrigation work under field conditions. Utah.

Development of strains of alfalfa and sweet clover with a minimum percentage of hard seeds. Wyo.

Alfalfa: The production of a local strain of alfalfa for seed production and resistance to leaf spot disease. Comparison of a local strain with 14 other regional strains for yield, hardiness and freedom from disease. Ohio.

Source of alfalfa seed with reference to hardiness. Wyo.

Alfalfa - hardiness studies.--To secure data upon the comparative amount of hardiness present in different varieties of alfalfa. N.Dak.

Domestic v. foreign seed of alfalfa and red clover. N.Y. State.

Studies of yield and digestibility of various cuttings of alfalfa and sweet corn. Wash.

Alfalfa investigations. Iowa.

Alfalfa experiments. N.E., (Staunton Substation) Va.

Alfalfa experiments. Its culture in Virginia. Va.

FIELD CROPS--Artichokes.

Tests of Jerusalem artichokes.--To learn if artichokes can be successfully grown and, if so, their value for forage. (Sitka, Kodiak, Fairbanks and Matanuska Substations) Alaska.

Silage crop investigation. Comparison of sunflowers and artichokes. (Sandpoint Substation) Idaho.

Barley.

Studies on inheritance in barley. Ill.

Effects of selection in pure lines and the inheritance of various characters in crosses between pure lines. The effect of selection in pure lines of barley. Minn. A.

Barley breeding. Mich.

Breeding barley. N.Y. Cornell.

Breeding work with barley. S.C.

Barley breeding.--To create earlier and better varieties for Alaska. Alaska.

Barley, rye, and oat breeding. Wis.

Cereals: Breeding and selection of pure strains of wheat, barley, oats and rye. (Union Substation) Oreg.

Production of improved varieties of barley. Minn.

Improvement of barleys through hybridization. S.Dak.

Barley improvement. Idaho.

Improvement of barley through breeding and selection. (North Platte Substation) Nebr.

Barley and oats - testing varieties and hybrids.--To determine possible barley and oats varieties or selections resistant to disease and promising for yield. N. Dak.

Variety testing and improvement of varieties of barley by crossing and selection. Ohio.

Variety test of barley. (North Central Substation, Grand Rapids) Minn.

FIELD CROPS--Barley. (Cont.)

Variety tests of barley. S.C.

Barley variety tests.--To learn the best varieties for general planting. Alaska.

Varietal experiments with barley.--To determine what varieties are best adapted to this part of the State. (Dickinson Substation) N.Dak.

Variety trials of grain.--To try out varieties of wheat, barley and corn for yield, quality and hardiness. (Imperial Valley) Calif.

Small grain variety tests.--Testing of standard varieties of wheat, oats, rye and barley. (Statesville Substation) N.C.

Cereals: Varietal trials with barley, wheat, oats, peas, flax and rye. (Union Substation) Oreg.

Variety testing and head selection of barley for yield and early maturity. Wyo.

Variety trials with wheat, oats and barley.--Determination of the best varieties under local soil and climatic conditions. (Kearney Park) Calif.

Varietal experiments with winter wheat and barley, spring wheat, barley, oats and field peas. (Sandpoint Substation) Idaho.

Variety tests with wheat, oats, and barley. (Aberdeen and Sandpoint Substations) Idaho.

Small grain investigations. Variety test with wheat, oats, barley and miscellaneous grains under high altitude conditions. (High Altitude Station) Idaho.

Cereal variety tests.--To test new and standard varieties of spring wheat, oats, barley and winter rye, as to yielding capacity, resistance to disease, and trade value as measured by milling and baking tests. N.Dak.

Varietal trials, including wheat, barley, oats, field peas, corn, and potatoes. (Moro Substation and Hood River Substation) Oreg.

Varietal trials of winter and spring grains, including wheat, oats and barley. Oreg.

A study of the performance of different varieties of spring wheat, barley, and corn and their adaptation to northern and central Illinois conditions. Ill.

A study of the adaptation of the important varieties of spring barley for Missouri conditions.--To determine the adaptation of different standard varieties of spring barley to the various soil types of the State. Mo.

Barley varieties in the Gallatin Valley. Mont.

FIELD CROPS--Barley. (Cont.)

Barley varieties in the Judith Basin. (Judith Basin Substation) Mont.

Barley varieties in northern Montana. (North Montana Substation) Mont.

Barley: Variety tests and cultural experiments. Va.

Barley production: Varieties, breeding, and cultural methods. Ark.

Variety trials and cultural requirements with small grains.---Wheat, oats and barley in rows to determine the relative value of varieties of cereals for California conditions, especially with regard to yield. Calif.

The culture and improvement of small grains, including wheat, oats, barley, rye, etc. Ariz.

Variety testing, breeding, acclimatization and cultural studies of small grains.---To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley and winter emmer. Nebr.

Cultural experiments with spring barley. Mo.

Date-of-planting experiments with wheat, oats and barley; also, cotton and corn. (Jackson Substation) Tenn.

Rates and dates of seeding barley. (Northwest Substation, Crookston) Minn.

Rate and date of seeding oats, wheat, barley, and rye. Minn.

The use of treble superphosphate with sweet clover and barley on light valley soils. (West Central Substation, Morris) Minn.

Barley in the Judith Basin Crop rotation. (Judith Basin Substation) Mont.

Barley in northern Montana crop rotations. (North Montana Substation) Mont.

Barley on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Continuous cropping plats of oats, barley, and wheat. Two tons manure each year per acre. (West Central Substation, Morris) Minn.

Effect of stage of maturity at harvest upon the germination power of barley, wheat, and oats seed. Wyo.

Studies in the classification of farm crops, including field beans, field peas, oats, barley, and millet varieties. Minn.

Barley production, culture and storage investigations. Iowa.

Studies of varietal resistance of wheat, barley, rye and oats to root and culm rots. Minn.

FIELD CROPS--Barley. (Cont.)

Studies of the resistance of barley to Helminthosporium sativum. Minn.

Breeding, General.

To determine the best method of technic in plant breeding work. Minn.

To isolate, introduce or produce profitable strains of cotton, corn, oats, and other crops adapted to the Delta. (Delta Substation) Miss.

Brome Grass.

Brome grass: Isolation and fertilization of strains of brome grass.--To obtain self-fertilized seed of improved strains for increase. N.Dak.

A study of the effect of inbreeding in smooth brome grass (Bromus inermis) and alfalfa (Medicago sativa). N.Dak. (A)

Alfalfa and brome grass on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Alfalfa - brome grass mixtures. (Judith Basin Substation) Mont.

Broom Corn.

To compare different types for the production of brush and to determine the best cultural methods for the crop under irrigation. N.Mex.

Buckwheat.

Buckwheat investigations, including variety tests, rate and date of seed-ing, and breeding for improvement. W.Va.

Cereals, General. (See also specific cereals.)

Inheritance study of cereals. A study of the laws of inheritance with reference to specific characters. Wash. (A)

Cytological studies in cereals to determine the chromosome number and behavior in species hybrids in relation to sterility and segregation of hereditary characters in such hybrids. Maine. (A)

Correlation of characters in grain. Colo.

Cereal investigations. Selection, propagation, and testing of pure lines of promise. Va.

Small grain investigations. Cereal breeding and selection in the nursery. (Aberdeen Substation) Idaho.

FIELD CROPS---Cereals, General. (Cont.)

Grain breeding by straight selection and cross hybridization followed by selection. Wis.

Crop improvement by mass and individual plant selection, including small grains, corn, grain sorghums, and peanuts. Tex.

Cereal breeding. Utah.

Small grain breeding. Ark. .

Investigations in cereal breeding. (Crookston, Morris, Duluth, Waseca, and Grand Rapids Substations) Minn.

Crop breeding, including cereals, cotton, and forage crops. Ga.

Breeding for resistance to wind shattering. Calif.

Improvement of the small grains. Ill.

Grain varieties. Utah.

Variety test of grains. (Northeast Substation, Duluth) Minn.

Variety tests with small grains. Ia., Miss.

Small grains--over-State variety testing. Mich.

Selection of varieties and strains of small grains. Wyo.

Variety tests of cereals and alfalfa. S.Dak.

Varietal trials of small grains, corn and forage crops. (Northwest Substation, Crookston) Minn.

Small grain investigations. Variety tests with wheat, oats, barley, and miscellaneous grains under high altitude conditions. (High Altitude Substation) Idaho.

Cereal investigations. Varietal tests of wheat, oats, barley, grain sorghums and corn. Cereal breeding. Seed treatment tests, and method and time of seeding tests with cereals. (Fort Hays Substation) Kans.

Cereal investigations. Varietal trials of winter and spring grains, including wheats, oats, and barley. Oreg.

Variety test of cereals in pure line plats. Selection of varieties and increase of pure line seed of best varieties. N.Mex.

FIELD CROPS---Cereals, General. (Cont.)

Varietal tests of cereal and forage crops. (Tribune Substation) Kans.

Variety test of cereals for the production of hay. (High Altitude Substation) Idaho.

Tests of quality of variety of grains from the farm crops section. Minn.

Varietal investigations of cereals and large-seeded legumes. (Irrigation Substation) Wash.

Grain varietal tests; test of furrow method of seeding wheat; cultivation tests of corn, etc. Kans.

Variety testing, breeding, acclimatization and cultural studies of small grains.--To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley, and winter emmer. Nebr.

Cereal varietal and cultural investigations. Wash.

Variety trials and cultural experiments with small grains. Calif.

Cooperative grain experiments.--To test several grains, particularly our hybrids, in various soils and exposures. Alaska.

The culture and improvement of small grains, including wheat, oats, barley, rye, etc. Ariz.

Seeding methods for small grains. Wyo.

Methods of seeding cereal and forage crops. (Tribune Substation) Kans.

Methods of seed bed preparation for small grains. Wyo.

Rate-of-seeding experiments with various small grain crops. (Jackson Substation) Tenn.

Time and rate of sowing winter cereals. Ga.

Dates and rates of seeding small grains. (Staunton Substation) Va.

• Rates and dates of seeding winter grains. (Northwest Substation) Minn.

Furrow drill for winter and spring grains in the Judith Valley. (Judith Basin Substation) Mont.

Minimum plant food attending maximum production along the line of cereals. S.Dak.

Influence of time of application of nitrate of soda on yield and nitrogen content of grain. Ohio. A.

Top-dressing experiments with winter cereals, corn, and cotton. Ga.

FIELD CROPS--Cereals, General. (Cont.)

The yield of cereals per unit of fertilizer elements absorbed from solution and from soil cultures. R.I.

Tests with grains. Wyo.

Small grain trials. (Valentine Substation) Nebr.

Legumes with small grains. Ark.

Miscellaneous grain investigations, including rye and emmer. Idaho.

Small grains for hay in the Judith Basin. (Judith Basin Substation) Mont.

Small grains for hay in northern Montana. (North Montana Substation) Mont.

Competition in cereals. Nebr. (A)

Reliability of methods. Renewal of border rows (a) at beginning heading, (b) at full heading. Minn.

Threshing studies:--To determine factors affecting the efficiency of threshing small grains. Ill.

Relation of soil moisture, structural development and yield of small grain. Colo. (A)

Lodging of small grains. A study of the causes of lodging and cultural practices related thereto. Ohio. (A)

Lodging of small grains. Effect of environmental factors on chemical composition of plants, with special reference to this effect on the carbohydrate-nitrogen relation. Ohio. (A)

Lodging of small grains. Effect of environmental factors on physical characters of plants, such as diameter of culm, breaking strength of culm, length of culm, number of nodes, number of leaves, etc.; also, effect on moisture content of soil, rate of evaporation as measured by atmometers, wind velocity, etc. Ohio. (A)

Lodging of small grains. Effect, if any, of environmental factors on the formation of condensation products, with special reference to cell wall material and strengthening substances, such as lignin. Ohio. (A)

Lodging of small grains. The relation of field conditions and cultural practices to the carbohydrate-nitrogen ratio, particularly to the nitrogen. Ohio. (A)

FIELD CROPS--Cereals, General. (Cont.)

Lodging of small grains. Varieties in relation to the carbohydrate-nitrogen ratio, particularly the carbohydrate, by virtue of variations in their stooling characteristic. Ohio. (A)

Lodging of small grains. The effect of shading with cheesecloth on the carbohydrate-nitrogen ratio, particularly as to the carbohydrate; or, the effect of reduced sunlight on the development of carbohydrates. Ohio. (A)

Cereal physiological studies. (Adams Substation) Wash.

Tests of mixtures of small grains at Churchville and Alfred, N.Y.
N.Y. Cornell.

Combination of cereal crops. Oats, barley, spring wheat and flax grown in several combinations for yield of grain. Ohio.

Tests of various grain mixtures. Minn.

Field pea - grain mixtures for hay in the Judith Basin. (Judith Basin Substation) Mont.

Field pea - grain mixtures for hay in northern Montana. (North Montana Substation) Mont.

Commercial fields of grain and forage. (North Montana Substation) Mont.

Comparison of inorganic composition of cereals. R.I.

Cereal and flour investigations. Minn.

Seed treatment materials and methods. Cereals and potatoes. Oreg.

Cooperative work in testing and disseminating stocks of small grains.
Ark.

Clovers, etc. (See also Legumes, General.)

Clover: (a) Plant selection of individuals resistant to disease. (b) A study of the progeny of these plants as to resistance. Ohio.

Clover, species of. Ala.

Variety test of clovers. (North Central Substation, Grand Rapids) Minn.

Varietal trials with clover. Oreg.

Clover variety test.--To determine the leading varieties. Ia.

A comparison of the several species and varieties of clover, as to yield and hardiness. Ohio.

FIELD CROPS--Clovers, etc. (Cont.)

Variety tests of clover for seed and forage production. Wis.

Testing clovers for yields of hay. Va.

Testing varieties of grasses and clovers both for forage and for hay as to their adaptability to local climate and soil conditions. (Starkville, Holly Springs and Raymond Substation) Miss.

Grasses and clovers for forage and permanent pasture, including Bermuda grass and bar and crimson clover. (Holly Springs Substation) Miss.

A comparison of methods and times of seeding clover. Ohio.

Clover seeding experiments. A study of time and methods of seeding. Ky.

Investigation in seeding clover in sub-irrigated valleys. (Valentine Substation) Nebr.

The effect of straw mulch applied to wheat upon the yield of wheat and the following clover. Ohio.

Alfalfa substitutes--clovers and grasses. (Hermiston Substation) Oreg.

Clover in the Judith Basin crop rotation. (Judith Basin Substation) Mont.

Clover utilization. (Northeast Demonstration Farm, Duluth) Minn.

Clover investigations.--To study the various factors that affect the production of clover under the conditions of this part of the country, and especially to determine the reasons for clover failures and to develop practical methods of overcoming them. Ind.

Tests of peas and clovers.--To ascertain the value of these legumes for Alaska and how best to grow them. Alaska.

Experiments with orchard grass and clovers. Ark.

Red, mammoth, alsike, and white clover investigations. Iowa.

A study of the possibilities of Alaska clover as a hay and as a seed crop when it constitutes one of the crops in a four-year rotation of corn, oats, wheat and clover. Ill.

The production of an improved red clover for northern Minnesota. (North Central Substation, Grand Rapids) Minn.

Red Clover: Improvement of red clover in regard to yield, vigor, etc., under various environmental conditions. Ky.

FIELD CROPS--Clovers, etc. (Cont.)

Domestic v. foreign seed of alfalfa and red clover. N.Y. State.

Comparison of imported and domestic strains of red clover seed for yield and hardiness. Ohio.

Comparison of red clover from European and American seed when spring-sown. Tenn.

Trials of red clover seed from various foreign countries in comparison with home-grown seed. (Jackson Substation) Tenn.

A test of foreign clover, including Bohemian, Chilean, German, Hungarian, and Italian red clovers. N.H.

Comparison of hardiness of red clover from the various seed-producing sections of the world. Minn.

A study of the adaptations of the important strains of red clover, together with a study of diseases, time of clipping, and other factors affecting seed production. Mich.

Culture experiments with alfalfa and red clover. (Sandpoint Substation) Idaho.

Rate-of-liming experiments with (a) burnt lime and (b) ground limestone. A complete series for both red clover and alfalfa. (Lurietreesboro Substation) Tenn.

Trials to determine the best method of securing stands of red clover. Oreg.

Medium red clover as a hay and seed crop. Ill.

Mammoth clover as a seed crop and as a soil improver. Ill.

A study of red clover failures. Ky.

Crimson clover breeding. Mich.

Source of crimson clover seed.--A study of crimson clover seed from sections of Europe and the United States. N.C.

Production trial of Ladino clover. Oreg.

Lespedeza improvement by selection and trial of strains and varieties. Tenn.

Lespedeza strains.--A comparison of Tennessee pedigreed Lespedeza and the Kobe strain. N.C.

FIELD CROPS--(Clover), Sweet.

Inheritance of seed color in hardy alfalfas and sweet clover. Mont. (A)

Sweet clover breeding. Mich.

Variety tests of sweet clover for hay and for seed. (Hermiston Substation) Oreg.

Experiments with sweet clover., (a) Variety of species test, (b) Nurse crop test, (c) Scarified vs. unscarified sweet clover. (Dickinson Substation) N.Dak.

The use of treble superphosphate with sweet clover and barley on light valley soils. (West Central Substation, Morris) Minn.

Melilotus--Rates of lime and phosphates. Ala.

Melilotus, with and without lime, followed by corn. Ala.

Sweet clover cultural studies. Mich.

Cultural test with sweet clover. Idaho.

Time and rate of seeding melilotus. Ala.

Sweet clover investigations.--To determine both the time of seeding and method of preparing the seedbed in growing sweet clover. Okla.

Relation of time and amount of irrigation to seed production with alfalfa and sweet clover. (Hermiston Substation) Oreg.

Value of sweet clover as forage crop for Wisconsin. Wis.

Sweet clover as a hay and seed crop. Ill.

Vetches and melilotus, with and without oats, for hay. Ala.

Sweet clover for hay in the Judith Basin. (Judith Basin Substation) Mont.

Sweet clover for seed in the Judith Basin. (Judith Basin Substation) Mont.

Sweet clover for hay in northern Montana. (North Montana Substation) Mont.

Sweet clover for seed in northern Montana. (North Montana Substation) Mont.

Comparison of alfalfa, sweet clover, cowpeas, and soy beans as hay crops. (Charlotte Court House Substation) Va.

FIELD CROPS—Clover, Sweet. (Cont.)

Pasture experiments with sweet clover.--To ascertain the value of sweet clover as pasture for dairy cows. N.Mex.

Sweet clover investigations.--To compare differences in strains of yellow sweet clover, value of yellow and white sweet clover for pasture purposes, silage productions from sweet clover, and to compare it with other legumes as to ability to establish stands in competition with weeds. N.Dak.

Sweet clover as a crop for soil improvement in a 3-year and a 4-year rotation. Ill.

Sweet clover as a cover and green manure crop. R.I.

Value of green and ripe seeds in alfalfa and sweet clover. Mont.

Effect of clipping sweet clover at different stages of growth. Ky.

Sweet clover experiments to determine effect of cutting for hay the first year on stand and hay production the second year. Tenn.

Sweet clover investigations. Pa.

Nurse crops for sweet clover in the Judith Basin. (Judith Basin Substation) Mont.

Nurse crops for sweet clover in northern Montana. (North Montana Substation) Mont.

Seeding alfalfa and sweet clover with and without a nurse crop. (Northwest Substation, Crookston) Minn.

Development of strains of sweet clover and alfalfa with a minimum percentage of hard seeds. Wyo.

Sweet clover and scarification. (Northwest Experiment Station, Crookston) Minn.

Determining sweet clover plants per acre, their average height and amount of dry matter per acre when spring plowed as a green manure crop. Ill.

Tests with biennial sweet clovers. Iowa.

A comparison of the top and root growth of annual and biennial sweet clovers. Minn.

Hubam clover breeding. Iowa.

Experiments with annual sweet or Hubam clover to learn its genetic origin. Maine.

Hubam clover. Del.

FIELD CROPS--Clover, Sweet. (Cont.)

Investigation of the value of Hubam or annual sweet clover as compared to the biennial clovers. Mass.

Annual (Hubam) and biennial sweet clover. Ohio.

Hubam clover production. Iowa.

Hubam clover as a hay crop. Conn. Storrs.

Studies of Canadian Albotrea (biennial yellow-blossomed sweet clover). Wis.

Corn. Genetic Studies.

Mendelian studies with corn. N.Y. Cornell.

Genetic studies of corn, with special reference to linkage. N.Y. Cornell.

Genetic analysis of maize. Including (a) the inheritance of Mendelian characters in maize; (b) the relative frequency of crossing over in microsporogenesis and megaprogenesis; (c) the occurrence and frequency of mutation in the factor of pericarp color in maize; and (d) competition among male gametes in maize. Mo. (A)

A study of inheritance of characters in corn with particular regard to their linkage relations and location of factors in the chromosomes. Conn. State. (A)

Field corn--ear row and character inheritance work. Mich.

Corn: The inheritance of prominent ear and stalk characters and their relation to yield, namely: (a) shape of ear (b) length of ear (c) number of rows per ear (d) filling of tip (e) indentation of kernel (f) height of ear in stalk (g) height of plant (h) proportion of grain to cob. Ohio.

Inheritance of barrenness in corn. S.C. (A)

The effect of selection of certain chemical and physical characters of the corn plant. Ill.

Corn: F_1 generation yield studies.--To find to what extent, if any, the F_1 generation will outyield and mature in advance of the respective parents and to fix upon those hybrids showing the maximum amount of such changes. N.Dak.

Commercial value of first generation crosses in corn. Minn.

FIELD CROPS--Corn. (Cont.)

Breeding Experiments.

Breeding experiments with corn. Ala. (A)

Corn production: Breeding. Ark.

Corn breeding. Ind., N.J., Pa.

Corn breeding investigations. Iowa.

Breeding work with corn. S.C.

Ear-to-row breeding work with corn. S.C.

Breeding of field corn. The production of one outstanding, high-yielding variety adaptable to the varying climatic condition in Porto Rico. Porto Rico.

Breeding field corn and sunflowers. N.Y. Cornell.

Breeding experiments with wheat, oats, corn, and sorghums. Kans.

Corn breeding.--To determine the characteristics of parent strains that are essential to the production of high-yielding hybrid progenies. Miss. A.

Breeding corn for high and low protein content and additional studies of the characteristics of strains produced from the standpoint of susceptibility to disease and characteristic proteids. S.Dak.

The development of varieties of corn resistant to root rot and stalk rot. Minn.

Breeding corn for disease-resistance and yield. Ill.

Breeding corn for yield and disease resistance. Ky.

Corn. Breeding a high yielding, heat resistant field corn. Ariz.

Corn breeding and improvement. Idaho.

Comparison of systems of breeding corn. S. Dak.

To establish a system of corn breeding to produce an improved variety for this section of the State. (Callwell Substation) Idaho.

Corn breeding--inbreeding--pure line work. Mich.

The effect of inbreeding and crossing on corn. Conn. State. (A)

A study of inbreeding in corn as a source for selection of adaptability to different soil types. Iowa.

FIELD CROPS--Corn. Breeding Experiments. (Cont.)

Improvement of corn through inbreeding and subsequent cross breeding. Minn.

Degree of close breeding in maize. A study of the degree to which close breeding may be practiced with safety in fixing selected types. Nebr.
(A)

Corn breeding experiments.--To establish pure lines from a few of the best varieties and then by hybridization to get varieties of superior productivity. Tenn.

Cooperative corn improvement. Ark.

Corn improvement at Waseca. Minn.

Improvement of corn through breeding and selection. (North Platte Substation) Nebr.

Selection and breeding of corn for eastern Idaho. (Aberdeen Substation) Idaho.

Corn improvement by selection, ear-to-row method. (North Central Substation, Grand Rapids) Minn.

Effect on yields of corn of ear-row selection, and of detasseling backward or poorly-eared stalks. R.I.

Improvement of corn and sorghum by selection. (Imperial Valley) Calif.

Selection of varieties and strains of corn. Wyo.

Corn improvement.--Seed selection to study corn selection methods and to improve a strain of corn for the mountain section. (Swannanoa, Willard, Statesville, and Wenona Substations) N.C.

Effect of continuous selection on yield in corn. Ill.

Commercial value of different methods of selection with White Rustler Dent corn. Minn.

Corn production, selection, breeding and variety adaptation. Md.

Crop improvement by mass and individual plant selection, including small grains, corn, grain sorghums, and peanuts. Tex.

Selfing corn plants of Northwestern Dent and other varieties.--To isolate strains of pronounced type to serve as the basis of future practical breeding. N.Dak.

FIELD CROPS--Corn. Breeding Experiments. (Cont.)

Corn: The effect upon yield of crossing the same variety and distinct varieties. Ohio.

Studies on development of cold resistant corn. Development of early maturing varieties for northern Wisconsin. Wis.

Corn breeding work.--To develop a strain of corn suitable for table use and not seriously susceptible to injury by the corn earworm (Chlosidea obsoleta). Virgin Islands.

Suckering of corn.--To determine the effect upon productiveness, type, sucker-producing tendencies, etc. of continuously selected seed from suckering stalks. Ind.

Corn breeding and improvement: Classification studies. Idaho.

Varietal Experiments.

Corn: Variety tests. Ala.

Variety test of corn. (Sandpoint Substation) Idaho, Ky., (North Central Substation, Grand Rapids) Minn., (Starkville and Holly Springs Substations) Miss., S.C., (Appomattox, Bowling Green, Chatham, Holland, Lightfoot, Martinsville, Staunton, Charlotte Court House Substations) Va.

A study of varieties of corn. Pa.

Corn--over-State variety testing. Mich.

Variety plots of field corn. Mich.

Variety tests of corn, wheat and soy beans. (Ridgely Substation) Md.

Varietal trials, including wheat, barley, oats, field peas, corn, and potatoes. (Moro Substation) Oreg.

Varietal trials of small grains, corn and forage crops. (Northwest Substation, Crookston) Minn.

Corn variety tests. Comparison of yields per acre of different corn varieties. (North Louisiana Substation, Calhoun) La.

Corn variety test and selection of strains. Wyo.

Comparative adaptation of different varieties of corn. Ark.

FIELD CROPS--Corn. Varietal Experiments. (Cont.)

Corn: Varietal experiments.--To determine what varieties are adapted to this climate for grain and silage production. (Dickinson Substation) N.Dak.

Late planted corn variety test. Ala.

Experiments with corn. Environmental experiment.--To compare strains of Northwestern Dent obtained from different sources. N.Dak.

A detailed study of the performance of early, medium, and late varieties of corn suited to the various sections of Illinois. Ill.

Corn variety test.--To determine the leading varieties of corn adapted to bluff soils. Ia.

Corn varieties in the Gallatin Valley. Mont.

Corn varieties in the Judith Basin. (Judith Basin Substation) Mont.

Corn varieties in northern Montana. (North Montana Substation) Mont.

Corn varieties on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Corn varieties for grain on irrigated land. (Huntley Substation) Mont.

Corn in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

Experiments with corn. Improvement tests.--To produce varieties adapted to this region. (Dickinson Substation) N.Dak.

To compare types and varieties of corn suited to North Dakota as to their yields of dry matter and production of nutrients. N. Dak.

Corn: A test of varieties commonly grown in the State and of pedigreed strains produced by the station. Ohio.

Variety test of corn.--To determine yields of different varieties of corn as shown by competitive tests. Okla.

Variety trials of grain.--To try out varieties of wheat, barley and corn for yield, quality and hardiness. (Imperial Valley) Calif.

Variety and cultural tests with corn. Va.

Corn investigations. Variety tests - selfing for smut resistance - rate of seeding. W. Va.

FIELD CROPS--Corn. Varietal Experiments. (Cont.)

Variety tests and cultural methods for corn.--To test methods of preparing the ground, applying the water, and cultivating the crop. N.Mex.

Cultural Experiments.

Corn breeding and improvement: Cultural studies. Idaho.

Corn--cultural studies. Mich.

Corn-cultured tests. S.C.

Comparison of effect of fall plowing, spring plowing and no plowing on corn, potatoes and wheat. (Northwest Substation, Crookston) Minn.

Tillage experiments with both corn and cotton.--To determine the best depth of plowing and cultivation. (Jackson Substation) Tenn.

Effect of cultivation upon the yield of corn.--Effect of cultivating two, three, four and five times. Ill.

Cultivation tests of corn; tests of furrow method of seeding wheat; grain varietal tests. Kans.

Corn: Comparison of effect upon corn of scraping ground with hoe vs. cultivation to kill weeds and conserve moisture. Ohio.

Date-of-planting experiments with both corn and soy beans. Tenn.

Date-of-planting experiments with wheat, oats and barley; also, cotton and corn. (Jackson Substation) Tenn.

Time of planting corn. Ark.

The effect of time of planting upon the yield of standard corn belt varieties of corn.--To determine the effect of seasonal conditions upon the production of varieties of corn which differ as to the time required to mature a crop. Ill.

The relation of date of planting and stand to yield of corn. Ohio.

Phenological observations as related to time of planting corn.--To determine the relation between certain common periodical annual events, such as the budding and flowering of trees to the best time to plant corn. Ind.

Corn: Effect of time of planting on yield. La.

FIELD CROPS--Corn. Cultural Experiments. (Cont.)

A study of the influence of time of harvesting and methods of drying on the yield of corn.--To determine (a) the best stage to harvest corn for seed, and (b) suitable methods of drying newly harvested seed corn. Ill.

Rates of planting corn. Ark.

Rate of planting corn for grain and for ensilage. (North Central Substation, Grand Rapids) Minn.

Corn spacing experiments. Miss.

Spacing test with corn. Ga.

Distance apart to plant corn. Wis.

A comparison of distance apart to plant corn, corn and soy beans, and sunflowers. Minn.

Fertilizer Experiments.

The effect of different amounts and different methods of applying commercial fertilizers to the corn crop.--To determine the effect of adding various amounts of commercial fertilizer to corn both in the hill or drill and over the entire soil surface upon the resulting crop. Mo.

The effect of various combinations of fertilizer elements upon the quality of wheat and corn. Del.

Methods of applying fertilizers to corn. Ohio.

Fertilizer experiments with corn. (Holland, Martinsville, and Staunton Substations) Va.

To determine the influence of the number of stalks per hill and the distance between hills upon the yield and quality of corn and yield of stover. Ill.

Checking v. drilling corn. Ill.

Sunflowers and corn. Rate and method of seeding. (Judith Basin Substation) Mont.

Rates and dates of planting corn. (Northwest Substation, Clookston) Minn.

Culture methods for corn. Spacing, also scraping, as compared with cultivation at different depths, no cultivation as compared with different number of cultivations, and a comparison of planting on a well prepared seed bed and on rough ridge. (Starkville, Holly Springs, and Delta Substations) Miss.

FIELD CROPS--Corn. Fertilizer Experiments. (Cont.)

Spacing experiments with both corn and cotton. (Jackson Substation) Tenn.

Triangular fertilizer experiments with cotton, corn, and wheat, followed by cowpeas, grown in rotation. Ga.

Fertilizing corn on overflow lands. Ala.

Top-dressing experiments with winter cereals, corn, and cotton. Ga.

Fertilizer needs of corn on the grass sod in non-manure rotations. R.I.

Rotation and fertilizer experiments with corn, sweet potatoes, peanuts and Napier grass, to determine the production of corn, sweet potatoes and peanuts in rotation, using various forms of commercial fertilizers and lime, and also the best method of fertilizing Napier grass. Fla.

Continual growth of field corn: 50 pounds of nitrogen (a) with no cover crop, (b) with stover turned in, (c) with rye cover crop; 20 pounds of nitrogen with legume cover crop. R.I.

Sources of nitrogen for corn. Ala.

Various forms of nitrogen for corn. Also different times of application of nitrate of soda to corn. Miss.

Corn: Time of applying nitrate of soda. Ala.

Time of application experiments with nitrate of soda for: (a) corn, (b) cotton. (Jackson and Murfreesboro Substations) Tenn.

Clover v. rye cover crops as influencing the nitrogen needs of corn. R.I.

Potash experiments.--To study the effects and value of different forms of potash with cotton, corn and potatoes on various types of soil. N.C.

Investigations of the availability of soil potash for corn. Conn. Storrs.

Lime experiment with corn. Ala.

The value of limestone and other fertilizing materials on the production of marketable and unmarketable corn. Ill.

Rates of fertilizing corn following legumes. Ala.

FIELD CROPS--Corn. (Cont.)

Silage Corn.

Corn investigations.--To determine adaptability of Indian corn for grain, silage, and forage production and to determine the yield of dry matter per acre at different stages in the development. N.Dak.

Types and varieties of corn for silage. Ill.

Corn varieties for silage on irrigated land. (Huntley Substation) Mont.

Silage crop investigations: Variety tests of corn for the production of silage. (Aberdeen Substation) Idaho.

A comparison of early, medium, and late maturing types of corn for silage, on the basis of milk produced per acre. Conn. Storrs.

Cultural tests of corn for silage production. Idaho.

Early planting of silage corn compared with regular date. Conn. Storrs.

Corn silage: Comparison of effect of rate of planting upon yield of Blue Ridge and Clarage corn harvested for silage at different stages of maturity. Ohio.

Corn investigations.--To determine the yielding capacity of introduced varieties as compared with those locally grown for the production of silage. (Caldwell Substation) Idaho.

Miscellaneous.

Corn: The relation of the environment of the mother plant to the yielding ability of the progeny. Ohio.

Comparison of yielding ability of utility corn-show samples.--To determine the relation, if any, existing between the type of seed, as judged by the utility score card, and the performance of such corn in the field. Ill.

Home-grown v. imported seed corn. (Northwest Substation, Crookston) Minn.

Effect of companion cropping of corn with legumes. S.C.

Growing corn and soy beans together. Ky.

Investigation of associated growth of corn and soy beans. Wis.

A comparison of the most important grain sorghums with corn for grain and forage production. Mo.

FIELD CROPS- Corn. Miscellaneous. (Cont.)

Companion cropping of corn and soy beans. Ill.

Corn production and storage investigations. Iowa.

Physiological studies in certain abnormal types of corn (from plant breeding crosses). N.Y. Cornell.

Factors influencing the development of the maize plant.--Field studies of the plant. Mo.

Principles governing growth and maturity in corn. Va. (A)

Corn: A study of pollen distribution as effected by (a) wind direction and velocity, (b) condition of atmosphere, (c) distance from field. Ohio.

The relation of the time of harvest of corn to (a) yield of shelled corn and fodder, (b) germination and yielding capacity of seed, (c) amount of infection of the seed with pathogenic organisms. Ohio.

The manner of reaction of various pure lines of corn to smut. Minn.

Legumes v. rye as cover crops for corn. R.I.

Corn on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Corn v. sunflowers in northern Montana. (North Montana Substation) Mont.

An investigation having to do with the development of the various parts of the maize plant as influenced by variation in soil moisture, soil composition and texture, and in the supply of plant food. Mo.

Corn in northern Montana crop rotations. (North Montana Substation) Mont.

Rotations compared with continuous corn cropping. Ill.

Corn.--To determine whether the gain in kernel weight in corn incident to fertilization by foreign pollen represents a net gain in yield or merely a gain for these kernels at the expense of those not resulting from fertilization by foreign pollen. Ohio.

The characteristic proteids of corn as affected by degree of maturity. S.Dak.

Effect of legumes in corn. Ark.

Tillering in corn. Ark.

FIELD CROPS--Cost of Production. (See RURAL ECONOMICS--Cost of Production and Accounting.

Cotton.

A study of heredity and development in the cotton plant. Miss. (A)

The genotypic constitution of certain varieties of cotton.--To study the mode of inheritance and association of economic qualities in cotton. N.C. (A)

A study of the inheritance of fruit characters in cotton. Ark. (A)

Fundamental study of inheritance in cotton. Tex. (A)

Cotton breeding. La.

Plant breeding--Cotton. Okla.

Breeding work with cotton. S.C.

Crop breeding, including cereals, cotton, and forage crops. Ga.

Breeding improved varieties of cotton. Miss. (A)

Cotton breeding experiments.--To get more desirable types for the northern limits of cotton production. Tenn.

Cotton breeding.--Pure line selection with the Mexican Big Boll variety. (Rocky Mount) N.C.

Cotton breeding experiments.--To improve the quality and increase the length of lint, to reduce susceptibility to disease and insect pests, thus increasing the acre yields of Sea Island cotton in St. Croix. Virgin Islands.

Cotton breeding.--To make selections within the Pima variety in order to improve this in earliness, percentage of lint, yield, and form of plant. Also crossings with Pima and various short-staple varieties. Ariz. (A)

Breeding experiments with cotton.--To include relation between size of seed and viability, productiveness, degree of relationship between the parents of the seed, etc. Ala. (A)

Cotton improvement.--The selection of cotton to meet boll weevil conditions and supply lint of superior spinning qualities. N.C.

Cotton hybridizing experiments.--To utilize the drought-resistant and disease-and-insect-immunity characters of native wild cotton in hybridizing with the more improved forms to combine the hardy characters of the former and the more productive and higher lint quality of the latter. Virgin Islands.

FIELD CROPS--Cotton. (Cont.)

Development of improved strains of cotton. Ark.

Natural crossing in cotton. Ark.

The selection of wilt resistant strains of cotton for Arkansas. Ark.

Cotton: Variety tests. Ala.

Cotton production: Variety studies. Ark.

Cotton variety test. (Baton Rouge Substation) La.

Variety tests with cotton. (Starkville and Holly Springs Substations)
Miss.

Cotton variety tests. S.C.

Variety tests with cotton. (Holland Substation) Va.

Variety tests with cotton.--To determine the yields of different
varieties of cotton as shown by competitive tests. Okla.

Cooperative cotton variety study. Ark.

Cotton variety tests. A comparison of short staple varieties. Ala.

A study of the standard commercial varieties of cotton. Miss. (A)

Cotton variety test.--To test out the leading varieties of cotton as to
yields per acre and percentage of lint, and their adaptability to
northern Louisiana. (North Louisiana Substation, Calhoun) La.

Cotton variety test.--(a) To determine whether or not cotton can be
successfully grown in the irrigated valleys. (b) To ascertain, as
nearly as possible, the best varieties under the climatic conditions.
(c) To compare the short staple varieties and the long staple varieties.
N.Mex.

Cotton varieties.--To supply reliable information to growers of the
tobacco belt. (Rocky Mount) N.C.

Variety test of cotton.--To determine what variety or strain of cotton
is best adapted to conditions in St. Croix. Virgin Islands.

Cultural methods for cotton. (Holly Springs and Delta Substations)
Miss.

FIELD CROPS--Cotton. (Cont.)

Tests of methods of cultivating cotton. S.C.

Cultural experiments with cotton, kafir and oats. Okla.

Cultural experiments with cotton.--To determine the best cultural methods for cotton in the Imperial Valley, Calif.

Cotton culture test.--Studies of early preparation of seed bed as compared to fresh bedding, close and thin spacing and time of planting. (Statesville and Rocky Mount) N.C.

Time and method of preparing land for cotton. S.C.

Effect of late cultivations on cotton. S.C.

Tillage experiments with both cotton and corn.--To determine the best depth of plowing and cultivation. (Jackson Substation) Tenn.

Cotton culture and spacing tests. S.C.

Cotton spacing. Ala.

Spacing experiments with cotton. Ark., (Columbia Substation) Tenn.

Spacing of cotton. Ga.

Cotton spacing experiments. Miss.

Cotton spacing tests. (Florence Substation) S.C.

Cotton spacing.--Tests of cotton given no thinning, 8 inches, 12 inches, 18 inches and 2 ft. in the row. N.C.

Spacing and thinning tests with cotton.--To determine the influence of different methods of spacing and thinning upon the yields of cotton Virgin Islands.

Spacing experiments with both cotton and corn. (Jackson Substation) Tenn.

Use of the weeder in thick spacing cotton. Ark.

Date-of-planting experiments with wheat, oats and barley; also cotton and corn. (Jackson Substation) Tenn.

Rate of distribution of seed and time of thinning cotton. Tex.

FIELD CROPS--Cotton. (Cont.)

Effect of time of planting on development and fruiting of cotton. S.C.

Time of turning under cover crops of rye in cotton fields. S.C.

Fertilizer experiments with cotton. (Holland Substation) Va.

Time of applying fertilizers to cotton. S.C.

Test on time and method of applying fertilizer to cotton. S.C.

Best time to apply and kind of top-dressing to use on cotton.--To determine the best time to apply soluble nitrogen as a second application to cotton also comparing the carriers most commonly used. (Raleigh and Lowe's Grove) N.C.

Rate of applying fertilizers to cotton. Ala.

Rate of application of fertilizer to cotton. Ga.

Triangular fertilizer experiments with cotton, corn, and wheat, followed by cowpeas grown in rotation. Ga.

Top-dressing experiments with winter cereals, corn, and cotton. Ga.

Effect of fertilizers on fruiting habits of cotton. S.C.

Fertilizer experiments with cotton.--To determine the influence of different fertilizers on quality and yield of lint when applied to cotton soils in the Virgin Islands. Virgin Islands.

Rates of fertilizing cotton following legumes. Ala.

Cotton fertilization with and without dusting for weevil control. (North Louisiana Station, Calhoun) La.

Cotton. Sources of nitrogen experiments. Ala.

Source and amounts of nitrogen in cotton fertilizer. Ga.

Various forms of nitrogen for cotton. Miss.

Time of applying nitrate of soda to cotton. Ala.

Time of application experiments with nitrate of soda for cotton and corn. Tenn.

Tests of various carriers of phosphorus as applied to cotton. Miss.

FIELD CROPS--Cotton. (Cont.)

Sources of phosphorus in fertilizers for cotton. (Holland Substation)
Va.

Source of phosphate experiment with cotton, corn and oats in rotation.
Ala.

Fertilizer experiments with acid phosphate and potash salts for cotton.
(Jackson Substation) Tenn.

Tests on time of applying potash to cotton. S.C.

Potash experiments.--To study the effects and value of different forms
of potash with cotton, corn and potatoes on various types of soil. N.C.

Lime experiment with cotton. Ala.

Effect of environmental factors upon time and rate of blooming in the
cotton plant. Ga. (A)

Climatic and soil effects upon length of cotton fiber. Ala.

Relation of oil and nitrogen content of cottonseed to other characters.
Ark. (A)

Factors influencing the oil content of cottonseed. S.C. (A)

Hill test of cotton. S.C.

Effect of topping cotton on rate of fruiting and developing and yield.
S.C.

Effect of pruning on fruiting of cotton. S.C.

Effect of seed treatment on yield etc. of cotton. S.C.

Cottonseed treatment.--A comparison of different methods of treating
cotton seed before planting to hasten germination. (Raleigh and Rocky
Mount) N.C.

Germination studies with cotton. Ariz.

Place effect experiments with cotton. Ga.

"Place effect" cotton variety test.--To determine effect of location
on yield, quality, and number of bolls per pound of a certain number
of varieties of cotton. (Northern Louisiana Station, Calhoun) La.

Place effect studies with cotton.--To study the place effect upon cotton
qualities when seed of the same strain have been grown in different
localities. N.C.

FIELD CROPS--Cotton. (Cont.)

Study of the acclimatization or adaptation to local conditions, of the cotton plant. Miss. (A)

A study of the factors which influence the growth and development of cotton buds and bolls. S.C. (A)

The culture and development of Pima and upland cottons. Ariz.

The irrigation of Pima cotton in the Imperial Valley. Calif.

Cotton wilt test. The testing of various commercial varieties on badly wilt-infected soil. Miss.

Wilt-resistance in cotton. Ark.

Cowpeas.

Variety test of cowpeas. (Appomattox, Bowling Green, Chatham, Holland, Lightfoot, Martinsville, Staunton, and Charlotte Court House Substations) Va.

Variety tests of cowpeas.--To determine the yield of different varieties of cowpeas, as shown by competitive tests. Okla.

Tests of varieties of cowpeas for seed and hay. Md.

Cowpeas: variety tests for seed and hay. Ala.

Cowpeas: Varieties, culture, and yields of hay and grain. Va.

Cowpea experiments.--To determine the relative value of various cowpea varieties as a food crop for the Virgin Islands. Virgin Islands.

Rate of seeding Sudan grass and cowpea mixture for hay. Ala.

Triangular fertilizer experiments with cotton, corn, and wheat, followed by cowpeas, grown in rotation. Ga.

Green manuring experiments with cowpeas, to determine the effect of cowpeas when turned under on nonlegumes immediately following. (Jackson Substation) Tenn.

To determine the best method of planting grain sorghums and cowpeas together. Okla.

Comparison of cowpeas and soy beans for hay and seed production. Mo.

Comparison of alfalfa, sweet clover and cowpeas and soy beans as hay crops. (Charlotte Court House) Va.

The production of cowpeas. Ark.

FIELD CROPS--Dry-land Crops.

Dry land and irrigation variety trials. Trials of field crop varieties on dry land and under irrigation to ascertain the comparative merits of each variety under both conditions and the effect of water in increasing yields. (Williston Substation) N.Dak.

Varietal trials with wheat, oats, barley, rye, field peas, corn, alfalfa, sunflowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

Studies at the Prescott Dry Farm. Including variety tests, rate and date of seeding tests, method of planting tests, inoculation of legumes -- tests designed to determine whether dry farming is feasible in this particular locality. Ariz.

Studies at the Sulphur Spring Valley Dry Farm. Including variety tests, rate and date of seeding tests, method of planting tests, inoculation of legumes-- tests designed to determine whether dry farming is feasible in this particular locality. Ariz.

Date and rate of seeding investigations with wheat, oats, barley, rye, field peas, corn, alfalfa, sunflowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

A series of crop rotation and tillage experiments. Green manure and soil moisture investigations. (Colby Substation) Kans.

Dry-land agriculture investigations. Crop rotation and tillage experiments; experiments in seed bed preparation for wheat; commercial fertilizer tests, green manures and soil moisture studies. (Fort Hays Substation) Kans.

Dry-land agriculture investigations. Experiments with crop rotation, tillage, varietal tests of corn, wheat, oats, barley, and methods of planting milo. (Garden City Substation) Kans.

Dry land crops rotation and tillage methods experiments. (North Platte Substation) Nebr.

Dry land rotation and tillage experiments.--To determine the proper rotation and crop sequence and the most desirable tillage methods for farming in western North Dakota. (Dickinson and Hettinger Substations) N.Dak.

Miscellaneous crops on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Miscellaneous field studies. Including dry-farm investigations to investigate crops suited to dry farming in high altitudes. Utah.

FIELD CROPS--Dry-land Crops. (Cont.)

Investigations at Dry-Farm Stations at Midtsoe. Utah.

Nephi dry farm substation:--With the following sub-projects: (a) Cereal breeding, (b) plowing and cultural tests, (c) cropping experiments, (d) fertility tests, (e) rotations, (f) varietal tests, (g) forage crop tests, (h) miscellaneous tests, (i) time of plowing and seedbed preparation. Utah.

Emmer.

Variety testing, breeding, acclimatization and cultural studies of small grains.--To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley and winter emmer. Nebr.

A study of the performance of different varieties of spring wheat, barley, and emmer and their adaptation to northern and central Illinois conditions. Ill.

Varietal experiments with oats and emmer.--To determine what varieties and groups of oats yield most in this locality. (Dickinson Substation) N.Dak.

Emmer, rye and miscellaneous grains investigations. Idaho.

Field Beans.

Bean breeding. Mich.

Bean breeding for interior dry land conditions in California. (Citrus Substation) Calif.

Breeding field and garden beans for disease resistance. N.Y. Cornell.

Varietal testing and field bean breeding work. Mich.

Beans--over-State varietal test. Mich.

Variety tests with beans. Miss.

Variety test of field beans. (Judith Basin Substation) Mont.

Variety test of field peas, soy beans and field beans. (North Central Substation, Grand Rapids) Minn.

Field and garden bean and pea investigations. Variety tests. (Aberdeen Substation) Idaho.

FIELD CROPS--Field Beans. (Cont.)

Field bean varieties on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Beans--cultural work. Mich.

Field and garden pea and bean investigations. Seed bean investigations. (Aberdeen Substation) Idaho.

Field beans in the Gallatin Valley. Mont.

Studies in the classification of farm crops, including field beans, field peas, oats, barley, and millet varieties. Minn.

Effect of variation in local day length on beans and sweet potatoes.--
To learn the importance of variation in day length and consequently of planting season on economic crops in the tropics. Porto Rico.

Field Peas.

Field and garden pea investigations. Breeding and improvement. Idaho.

Breeding of field and canning peas. (a) Field and canning peas. (b) Peas for northern Wisconsin. Wis.

Variety tests with peas. Miss.

Variety test of field peas.--To determine the relative value of varieties of field peas for forage and seed production. (Dickinson Substation) N.Dak.

Field and garden pea and bean investigations. Variety tests. (Aberdeen Substation) Idaho.

Variety test of field peas, soy beans and field beans. (North Central Substation, Grand Rapids) Minn.

Cereals: Varietal trials with barley, wheat, oats, peas, flax and rye. (Union Substation) Oreg.

Varietal trials, including wheat, barley, oats, field peas, corn, and potatoes. (More and Hood River Substations) Oreg.

Varietal experiments with winter wheat and barley, spring wheat, barley, oats and field peas. (Sandpoint Substation) Idaho.

Field pea varieties in the Gallatin Valley. Mont.

Field pea varieties in the Judith Basin. Mont.

FIELD CROPS--Field Peas. (Cont.)

Field pea varieties in northern Montana. Mont.

Field and garden pea investigations.--To determine the varieties best adapted to irrigated and dry lands. (High Altitude Substation) Idaho.

Field peas.--Variety tests and cultural methods adaptable to North Dakota. N.Dak.

Field and garden pea investigations. Cultural experiments. Idaho.

Forage crop investigations. Cultural trials with Tangier peas. Oreg.

Rate of planting peas and oats. (Sandpoint Substation) Idaho.

Garden and field pea experiment to determine time of planting and best varieties to grow. N.Mex.

Pea-raising experiment.--To demonstrate the practicability of raising peas on a field scale. (Langdon Substation) N.Dak.

Field peas in the Judith Basin crop rotation. Mont.

Value of the various pea varieties as a nurse crop for alfalfa. (Aberdeen Substation) Idaho.

Cause of "rogues" in peas. (Ashland Substation) Wis.

Field and garden peas investigations. Classification studies. Idaho.

Studies in the classification of farm crops, including field beans, field peas, oats, barley and millet varieties. Minn.

Field peas - grain mixtures for hay in the Judith Basin. Mont.

Field peas - grain mixtures for hay in northern Montana. Mont.

FIELD CROPS--Field Peas: (Cont.)

Tests of peas and clovers.--To ascertain the value of these legumes for Alaska and how best to grow them. (Fairbanks and Matanuska Substations) Alaska.

Miscellaneous forage crops and field peas. Mich.

Flax.

Investigations with flax. (a) Flax breeding, (b) cultural practice, (c) economic importance of flax compared with cereals, and (d) use of flax as a nurse crop. Wis.

The development of wilt-resistant flax. Minn.

Flax--breeding and cultural work. Mich.

Varietal experiments with flax.--To find what varieties are best adapted to this section of the State. (Dickinson Substation) N.Dak.

Flax varieties in the Judith Basin. Mont.

Cereals: Varietal trials with barley, wheat, oats, peas, flax and rye. (Union Substation) Oreg.

Methods of seed bed preparation for flax. Minn.

Rates and dates of seeding flax. (Northwest Substation, Crookston) Minn.

Flax tillage and date-of-seeding experiment--(a) To determine the relative value of corn and wheat land for growing flax, (b) to compare different methods of packing the ground for flax production on spring plowing, (c) to determine the best date for seeding flax. (Dickinson Substation) N.Dak.

Flax investigations.--(a) To determine the best methods for cropping flax on old land through means of crop rotation, (b) to develop new and better wilt resistant and higher yielding varieties of flax, (c) to determine methods of tillage in preparing land for flax, designed to effectively destroy weeds. N.Dak.

Value of flax for new land. (Ashland Substation) Wis.

Flax on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Flax in irrigated rotation in the Yellowstone Valley. (Huntley Substation) Mont.

FIELD CROPS--Flax. (Cont.)

Flax and wheat mixed cropping. N.Dak.

Flax-wheat mixture experiment.--To determine whether flax and wheat sown together will return a greater profit than either crop sown alone.
(Dickinson Substation) N.Dak.

Flax combinations with wheat and oats at different rates. (Northwest Substation, Crookston) Minn.

Flax - spring wheat mixtures under irrigation. Mont.

Flax - spring wheat mixtures in the Judith Basin. Mont.

Flax in the Judith Basin crop rotation. Mont.

Flax in northern Montana crop rotations. Mont.

Experiments in flax production. Idaho.

Flax retting. Mich.

Forage Crops.

Crop breeding, including cereals, cotton, and forage crops. Ga.

Varietal tests of cereal and forage crops. (Tribune and Colby Substations) Kans.

Forage crops--over-State variety testing. Mich.

Varietal trials of small grains, corn and forage crops. (Northwest Substation, Crookston) Minn.

Studies of varieties, culture and improvement of forage crops, such as sorghums and grasses. Ariz.

Forage crop investigations.--Varietal test of forage sorghums, alfalfa, millet, beans and peas; time, rate, and method of seeding tests; time of harvesting tests; and tests of pasture crops. (Fort Hays Substation) Kans.

Methods of seeding cereal and forage crops. (Tribune Substation) Kans.

Effect of fertilizers on hay and seed production. Oreg.

FIELD CROPS--Forage Crops. (Cont.)

Recording yields of alfalfa, peas and barley, corn and wheat after having received an application of different fertilizers. (Union Substation) Oreg.

To determine the best field practices for handling various forage crops, both for production of forage and production of seed. Wash.

Annual forage crops.--To determine the adaptability of annual forage crops, best cultural methods, and dates and rates of seeding. N.Dak.

Biennial and perennial forage crops.--The adaptability and best methods of culture of the biennial and perennial legumes and of the perennial grasses to the various soil types and climatic conditions of North Dakota. N. Dak.

Tests of crops, species, and varieties as to value for soiling crops. (Astoria Substation) Oreg.

Comparative test with forage crops and grasses. S.C.

Forage crop investigations.--To determine the forage crops best suited to Guam conditions and best cultural methods. Guam.

Studies of various forage plants suited to coastal plains soils. (Coastal Plains Substation) Miss.

Forage crop investigations, including an extensive set of annual forage crops compared as to yield, date of seeding, rates of seeding and methods of seeding; also a study of alfalfa from seed procured from different sources. Nebr.

Combinations of corn and other crops for forage uses. Ohio.

Commercial fields of grain and forage. (North Montana Substation) Mont.

Tests with imported grasses and forage plants. S.C.

Introduction and testing of miscellaneous forage crops. Idaho.

The introduction and testing of such crops as flax, buckwheat, sunflowers, corn, etc. for the production of grain or forage. (High Altitude Substation) Idaho.

Introduction and trial of new forage plants.--To include the introduction and trial on small plot areas of new plants which may prove valueable for hay, pasture, silage, or other forms of roughage for stock. Testing of some of the most promising of these new plants. Fla.

FIELD CROPS--Forage Crops. (Cont.)

Forage crop rotations in northern Montana. Mont.

Tests of different forage crops, at Churchville and Alfred, N. Y.
N.Y. Cornell.

A study of the adaptation and economic value of three forage crops not commonly grown in Pennsylvania. Pa.

To test and determine the relative values of different forage crops under Virgin Islands conditions. Virgin Islands.

Nursery trials of miscellaneous forage crops. Oreg.

Miscellaneous forage crop nursery. Mont.

Experiments in forage, green manure, and winter cover crops.--To determine the best use of rye, winter vetch, sweet clover, the common clovers, and alfalfa, for forage, green manures and winter cover crop purposes. Md.

Chemical composition of forage crops as affected by various factors. Iowa.

A study of some of the annual forage crops with special reference to yields of dry matter and chemical composition. Wyo.

Miscellaneous forage crops and field peas. Mich.

Forage crops experiment with miscellaneous crops. (Lightfoot Substation) Va.

Grass and forage plant garden.--To try out grasses and forage plants to ascertain their adaptability for range and pasture requirements. Calif.

Forage crops. W.Va.

Forage investigations. (Waterville and Irrigation Substations) Wash.

Tests of summer annual forage crops. Conn. Storrs.

Development of a soiling crop system for summer soiling for dairy cows. (Astoria Substation) Oreg.

Grasses, General.

Variety test of perennial grasses and in mixtures. (North Central Substation) Minn.

Variety test of grasses in the Judith Basin. Mont.

Varieties of grasses in northern Montana. Mont.

FIELD CROPS--Grasses, General. (Cont.)

To determine the best varieties of grasses and legumes for the production of forage and the most successful cultural practice. (High Altitude Substation) Idaho.

Testing varieties of grasses and clovers both for forage and for hay as to their adaptability to local climate and soil conditions. (Starkville, Holly Springs, and Raymond Substations) Miss.

Studies of varieties, culture and improvement of forage crops, such as sorghums and grasses. Ariz.

Grass and forage plant garden.--To try out grasses and forage plants to ascertain their adaptability for range and pasture requirements. Calif.

A study of the adaptability of various kinds of lawn grasses to Wisconsin conditions, and the best methods of handling them. Wis.

A comparison of 10 meadow grasses as regards yields, quality and permanency. Ohio.

Perennial grasses -- seed and hay yield. A comparison of the seed and hay yield of perennial grasses adapted to the region. (Dickinson Substation) N.Dak.

Dates of grass seeding experiment. (Martinsville Substation) Va.

Date-of-seeding experiments with grasses. (Columbia Substation) Tenn.

Fertilizer tests with grass. (Staunton and Martinsville Substations) Va.

Meadow and pasture project. Commercial fertilizers on grass mixtures. (North Central Substation, Grand Rapids) Minn.

Fertilizer experiments with Napier and Guatemala grasses and Japanese cane.--To determine the effect of local lime, barnyard manure, and the combination of the two, on the yield of Napier and Guatemala grasses and Japanese cane. Guam.

Rotation and fertilizer experiments with corn, sweet potatoes, peanuts and Napier grass, to determine the production of corn, sweet potatoes and peanuts in rotation, using various forms of commercial fertilizers and lime, and also the best method of fertilizing Napier grass. Fla.

Fertilizer needs of grasses in non-manure rotations. R.I.

Lawn and golf grasses. Different fertilizer treatment as influencing especially the soil reaction and weed growth. R.I.

FIELD CROPS--Grasses, General. (Cont.)

Grass and legume mixtures. Minn.

Lawn-grass mixtures sold in New York. N.Y. State.

Pure and mixed cultures of legumes and grasses for hay. Mont.

Meadow and pasture investigations. Mixed legumes and grasses. (North Central Substation, Grand Rapids) Minn.

Grasses and legumes for hay and seed. Idaho.

Grasses and clover for forage and permanent pasture, including Bermuda grass, and bur and crimson clover. (Holly Springs Substation) Miss.

Comparative test with forage crops and grasses. S.C.

Pasture trials with grasses and legume mixtures on hill land. Oreg.

Tests with imported grasses and forage plants. S.C.

Nursery trials with grasses for forage and seed production and disease resistance. Oreg.

Plot trials with grasses for forage and seed production. Oreg.

Experiments with orchard grass and clovers. Ark.

Napier grass breeding, to develop a high yielding strain. Fla.

Improvement of orchard grass (Cymodon dactylon). Ky.

Variations in orchard grass, with a view to selecting better strains. Va.

Orchard grass selection and improvement. Idaho.

Grasses and grass-like plants: Economic study of. Iris.

To prepare a manual of the wild and cultivated grasses of Maryland, by which they can be identified and their economic value determined. Md.

Alfalfa substitutes--clovers and grasses. (Hermiston Substation) Oreg.

FIELD CROPS--Hay.

Hay and pasture investigations. Iowa.

Emergency hay crops. Wis.

Forage crop investigations. Study of grain hay at different stages of cutting. Oreg.

Hay tests of forage plants alone and in mixture. W.Va.

Vetch and grain mixture for hay. Ala.

Clover and vetch in oat mixtures for hay, to be followed by corn. Ala.

Comparison of alfalfa, sweet clover, cowpeas and soy beans as hay crops. (Charlotte Court House Substation) Va.

Farm crops production investigations. Hay crops, non-legumes. (North-west Substation, Duluth) Minn.

Moisture changes in stored hay. Oreg.

Hemp.

Hemp.--A trial of varieties. Dates of planting and water requirements. Calif.

Horse Beans.

Cultural trials with vetches and related plants and with horse beans. Oreg.

Nursery trials with vetches and related plants, new vetch varieties, and horse bean varieties. Oreg.

Irrigation Crops.

Field crop investigations under both dry farming and irrigation. Varietal trials with wheat, oats, barley, rye, field peas, corn, alfalfa, sun-flowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

Dry land and irrigation variety trials. Trials of field crop varieties on dry land and under irrigation to ascertain the comparative merits of each variety under both conditions and the effect of water in increasing yields. (Williston Substation) N.Dak.

FIELD CROPS--Irrigation Crops. (Cont.)

Plat variation test on irrigated land. (Huntley Substation) Mont.

Field crop investigations under both dry farming and irrigation. Date and rate of seeding investigations with wheat, oats, barley, rye, field peas, corn, alfalfa, sunflowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

Experiments in irrigation agriculture. Experiment with crop rotation, commercial fertilizers, pasture grasses, alfalfa irrigation, winter irrigation of various crops, and the use of alfalfa as a pasture for hogs. (Garden City Substation) Kans.

Maximum crop production test on irrigated land. (Huntley Substation) Mont.

Commercial fields of grain and forage under irrigation. (Huntley Substation) Mont.

Irrigation rotation experiments. (Scottsbluff Substation) Nebr.

Johnson Grass.

The inheritance in root grasses between Sudan grass and Johnson grass.-- To determine the mode of inheritance of the root systems in crosses between Johnson grass and Sudan grass. Ga. (A)

Johnson grass eradication.--To determine a practical method of eradicating Johnson grass. N.Mex.

Kafir. (See also Sorghums)

Cultural experiments with cotton, kafir and oats. Okla.

Rate of planting kafir.--To determine the best rate to use in planting kafir. Okla.

Cultural experiments with kafir corn.--To find the effect of weeds and soil mulches on yield of kafir corn. Okla.

Kudzu.

Kudzu as (a) pasture crop (b) soil-improving crop, and (c) soil-holding crop. (Columbia Substation) Tenn.

Value of kudzu for pasture. Ga.

FIELD CROPS--Legumes, General. (See also specific legumes)

Cross inoculation studies of legumes. Investigation of some wild legumes to determine source of infection for cultivated varieties. Ill.

Varietal investigations of cereals and large-seeded legumes. (Irrigation Substation) Wash.

Orchard cover crops. Varietal tests of legumes for southern Oregon conditions. (Talent Substation) Oreg.

Comparison trials with different legumes. Oreg.

Legume trial garden. (Berkeley, Davis, Kearney Park, and Meloland Substations) Calif.

To determine the best varieties of grasses and legumes for the production of forage and the most successful cultural practice. (High Altitude Substation) Idaho.

Grass and legume mixtures. Minn.

Pasture trials with grasses and legume mixtures on hill land. Oreg.

Meadow and pasture investigations. Mixed legumes and grasses. (North Central Substation, Grand Rapids) Minn.

The culture and improvement of legumes adapted to the southwest. Ariz.

Use of sulphur, lime, gypsum, on leguminous crops. Idaho.

Legumes with small grains. Ark.

Pure and mixed cultures of legumes and grasses for hay. Mont.

Legumes and grasses for hay and seed. Idaho.

Various legumes for hay and seed. (Sandpoint Substation) Idaho.

A study of miscellaneous legumes. Ark.

Short winter legume test. Ala.

Farm crop production investigations. Legumes. (Northeast Substation, Duluth) Minn.

Effect of companion cropping of corn with legumes. S. C.

Effect of legumes upon subsequent crops under varying conditions. Ark.

Comparison of different amounts of rock phosphate with different legumes. Ill.

FIELD CROPS--Legumes, General. (Cont.)

Fertility experiments with various legumes. A comparative study, including reseeding ability. (Columbia Substation) Tenn.

Legume cultural experiments. (Berkeley, Davis, Kearney Park, and Meloland Substations) Calif.

Methods and date of planting legumes. (Sandpoint Substation) Idaho.

Leguminous forage crop experiments.--To introduce and test leguminous plants as feed for animals and as a source of nitrogen. Porto Rico.

Use of legumes in building up soil fertility. (Sandpoint Substation) Idaho.

Optimum and critical reaction for legume nutrition--certain acid soils. Oreg.

Adaptation of acid-resistant legumes.--Determination of the value as feed and as a green manure of certain more or less acid-resistant legumes which are, at present, not commonly grown in the State. Ill.

The effect of different legumes and different proportions of legumes in crop rotation upon nitrogen maintenance. Ill.

The comparative value of different legumes as soil improvers when used in rotation with cotton and corn. S.C.

Winter legumes as cover crops and green manures preceding human food crops. R.I.

Experiments with leguminous cover crops.--To determine the relative values of different legumes as cover crops in the Virgin Islands, with special reference to their ability to suppress Bermuda grass from sugar cane fields and other cultural crops. Virgin Islands.

Cover crop efficiency test.--To determine the comparative efficiency of various legumes as cover crops. Guam.

Hard seeds in legumes. N.Y. State.

A study of the hard seed in vetch and other legumes. N.Y. Cornell.

Value of hard seeds in legumes and methods of treatment. Mont.

Legume investigations. Field observations. (Meloland, Kearney Park and Davis Substations) Calif.

Peanuts, sorghums, legumes.--To keep in timely touch with subjects that are constantly coming up, not of sufficient importance for separate projects. Okla.

FIELD CROPS--Legume Inoculation.

Inoculation experiments with legumes. Wis.

Factors influencing the inoculation of legumes.--To determine the causes of variation in nodule production and nitrogen fixation by legumes. Ill.

Effect of various factors on inoculation by legume bacteria. Wash.

Effect of inoculation of soy bean seed on the nitrogen content of the plant. Wis.

Effect of inoculation upon the growth of various legumes. Wis.

Legume culture work. Wash.

Legume culture preparation. Idaho.

Production and distribution of bacteria for legumes. Mo.

The value of commercial cultures for the inoculation of legumes. Iowa.

Mangels.

Variety tests of mangel wurzels. (Northwest Substation, Crookston) Minn.

Milletts.

Variety test of millets. (North Central Substation, Grand Rapids) Minn.

Varietal experiments with proso millet.--To determine the value of proso millet as a grain crop in comparison with other grains; and to determine the best varieties for this locality. (Dickinson Substation) N.Dak.

Milletts, sorghos, and Sudan grass in the Judith Basin. Mont.

Millet, sorghos and Sudan grass in northern Montana. (North Montana Substation) Mont.

Testing millets for yields of hay. Va.

Annual forage crops--millets, sudan grass and other sorghums. Ohio.

Annual forage crops.--To test the relative forage yields of the annual grasses, millet, sorghum, and sudan grass. (Dickinson Substation) N.Dak.

Studies of drought-enduring forage crops, e.g., sunflowers, millets, sorghums. S.Dak.

Studies in the classification of farm crops, including field beans, field peas, oats, barley, and millet varieties. Minn.

FIELD CROPS Milo. (See Sorghums)

Oats.

Mendelian studies with wheat and oats. N.Y. Cornell.

Studies of inheritance in oats. Pa. (A)

Inheritance in oats.--To determine the factors controlling the inheritance of color, hull, and hulllessness, by means of hybridization and segregation. S.C. (A)

A genetic study of aberrant and false wild types in Kanota oats. Kans. (A)

Inheritance in a cross of Avena sterilis algeriensis and Avena nuda inermis. Ohio.

Hybridization of hulless X hulled oats. S.Dak.

Oat breeding. Mich.

Breeding oats. N.Y. Cornell.

Oat breeding investigations. Iowa.

Oat breeding.--To create earlier and better varieties for Alaska. Alaska.

Breeding with oats and wheat. (Aroostook Farm Substation) Maine.

Cereals: (1) Breeding and selection of pure strains of wheat, barley, oats and rye. (Union Substation) Oreg.

Breeding experiments with wheat, oats, corn and sorghums. Kans.

Oat, rye and barley breeding. Wis.

Oat improvement. Idaho.

Oat improvement. Pa.

Oat investigations and oat improvement. Tex.

Improvement of oats through breeding and selection. (North Platte Substation) Nebr.

Oats: Selection and breeding. (Baton Rouge Substation) La.

The development of varieties of oats resistant to black stem rust. Minn.

Studies of varietal resistance of wheat, barley, rye and oats to root and culm rots. Minn.

FIELD CROPS--Oats. (Cont.)

Wheat rust nursery.--To determine the rust resistance of different varieties and strains of wheat and oats and whether or not rusts in different sections of the continent differ. (Langdon Substation) N.Dak.

Barley and oats - testing varieties and hybrids.--To determine possible barley and oats varieties or selections resistant to disease and promising for yield. N.Dak.

Oat production: Variety studies, selection and breeding, cultural methods. Ark.

A study of oat varieties with a view to their improvement. Pa.

Oats. Variety testing and head selection for improvement. Wyo.

Oat variety tests. Ala.

Variety test of oats. (North Central Substation, Grand Rapids) Minn.

Oat variety test. S.C.

Variety tests with oats. (Appomattox, Bowling Green, Chatham, Lightfoot, Martinsville, Staunton, and Charlotte Court House Substations) Va.

Oat varieties. Del.

Variety tests with oats, wheat and barley. (Aberdeen and Sandpoint Substations) Idaho.

Varietal trials of winter and spring grains, including wheats, oats and barley. Oreg.

To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley and winter emmer. Nebr.

Variety trials with wheat, oats and barley.--Determination of the best varieties under local soil and climatic conditions. (Hearney Park Substation) Calif.

Small grain variety tests.--Testing of standard varieties of wheat, oats, rye and barley. (Statesville Substation) N.C.

Varietal experiments with winter wheat and barley, spring wheat, barley, oats and field peas. (Sandpoint Substation) Idaho.

Cereals: Varietal trials with barley, wheat, oats, peas, flax and rye. (Union Substation) Oreg.

FIELD CROPS--Oats. (Cont.)

To test new and standard varieties of spring wheat, oats, barley and winter rye, as to yielding capacity, resistance to disease, and trade value as measured by milling and baking tests. N.Dak.

Varietal trials, including wheat, barley, oats, field peas, corn and potatoes. (Moro and Hood River Substations) Oreg.

Oats. A test of common varieties and of pure-line strains for yield, quality, and adaptability. Ohio.

Variety test of oats.--To determine the yields of different varieties of oats as shown by competitive tests. Okla.

Variety tests and selections of hardy strains of winter oats. Md.

Oats variety tests.--To learn which are the best varieties for general planting in Alaska. (Fairbanks, Matanuska, and Rampart Substations) Alaska.

Variety tests with wheat, oats, barley and miscellaneous grains under high altitude conditions. (High Altitude Substation) Idaho.

A study of the performance of different varieties of oats and their adaptation to the several sections of Illinois. Ill.

A study of important varieties of oats for Missouri conditions. Mo.

Oat varieties in the Gallatin Valley. Mont.

Oat varieties in the Judith Basin. Mont.

Oat varieties in northern Montana. Mont.

Spring oats variety test.--To determine the best variety of oats for spring planting in the mountains where the winter climate is too severe for fall-sown oats. (Swannanoa Substation) N.C.

Varietal experiments with oats and emmer.--To determine what varieties and groups of oats yield most in this locality. (Dickinson Substation) N.Dak.

Variety tests and methods of seeding; also a study of the origin of false wild oats. W.Va.

Variety trials and cultural requirements with small grains.--Wheat, oats and barley in rows to determine the relative value of varieties of cereals for California conditions, especially with regard to yield. Calif.

Variety tests and cultural experiments with oats. Va.

The culture and improvement of small grains, including wheat, oats, barley, rye, etc. Ariz.

FIELD CROPS--Oats. (Cont.)

Cultural experiments with cotton, kafir and oats. Okla.

Fall v. spring planted oats. Ala.

Different methods of seeding oats. Ala.

Oats: A study of time, rate, and method of seeding. Ohio.

Date-of-planting experiments with wheat, oats and barley; also, cotton and corn. (Jackson Substation) Tenn.

Rates of seeding oats. (Northwest Substation, Crookston) Minn.

Rate of planting peas and oats. (Sandpoint Substation) Idaho.

Dates and rates of seeding oats. Conn. Storrs.

Rate and date of seeding oats, wheat, barley, and rye. Minn.

To study dates and rates of seeding wheat and oats at the Piedmont Substation. N.C.

Continuous cropping plats of oats, barley, and wheat, two tons manure each year per acre. (West Central Substation) Minn.

Oats in the Judith Basin crop rotation. (Judith Basin Substation) Mont.

Oats in northern Montana crop rotations. (North Montana Substation) Mont.

Oats in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

Oats on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Oat production and storage investigations. Iowa.

The chemical composition of market grades of oats. Tex.

Effect of stage of maturity at harvest upon the germination power of oats, wheat, and barley seed. Wyo.

Do seed oats deteriorate when sown continuously in this latitude? Conn. Storrs.

Lodging of oats. Wis.

Classification trials with oats. Oreg.

Studies in the classification of farm crops, including field beans, field peas, oats, barley, and millet varieties. Minn.

FIELD CROPS--Oats. (Cont.)

Flax combinations with wheat and oats at different rates. (Northwest Substation, Crookston) Minn.

Vetches and melilotus, with and without oats, for hay. Ala.

Varieties of soy beans and soy beans v. oats in rotation. Pa.

Pastures.

Pasture investigations. Del.

Hay and pasture investigations. Iowa.

Pasture investigations: (Sandpoint Substation) Idaho.

Pasture experiments. Pa.

Pasture improvement. Conn. Storrs. N.H. W.Va.

Permanent improvement of blue grass pastures. Iowa.

Permanent pasture studies.--To determine the grasses which will grow best under coastal plain conditions and their carrying capacity for beef steers and dairy cattle. N.C.

Pasture work. Permanent pastures: Making of a permanent pasture by determining the combination of plants best suited to obtain a long period of uniform grazing, the cost and method of seeding, and time necessary to make a permanent pasture under local conditions. (Starkville, Holly Springs, and Raymond Substations) Miss.

Pasture. Maintenance of permanent pasture. Ohio.

Pasture work: Temporary pastures: To work out a system of temporary pasture plants that will furnish continual grazing throughout the year as well as for summer grazing, principally for swine. Miss.

Studies of range pasture improvement. S.Dak.

Ecological study of pasture vegetation. Mass.

Pasture experiments: Plots of pasture grasses, which receive different fertilizer treatment and from which the grass is clipped at stated intervals, then weighed and samples analyzed to ascertain relative value of grass from different plots. Va.

FIELD CROPS--Pastures. (Cont.)

Grasses and clover for forage and permanent pasture, including Bermuda grass and bur and crimson clover. (Holly Springs Substation) Miss.

Variety tests of pasture grasses. Oreg.

Studies of pastures and pasture grasses for different sections of the State. Md.

Pasture experiments with sweet clover and other grasses. Mich.

A study of the forage on the pastures and ranges of California.--
Maintenance of forage supply in the mountain regions. (Sierra Natural Forest and Coast Ranges Substations) Calif.

Pasture and meadow crops for Arkansas. Ark.

Pasture and lawn-grass studies.--To determine which are best for Florida. Fla.

Carrying capacity of irrigated pastures in the Yellowstone Valley.
(Huntley Substation) Mont.

The carrying capacity of the pastures on the Ranch Experiment Station in Sutton-Edwards Counties. Tex.

Composition and carrying capacity of veterinary pastures, north of campus Berkeley. (Berkeley Hills and Strawberry Canon Substations) Calif.

Grazing trial.--To determine the carrying capacity of pasture grasses and the most economic season for and manner of grazing pastures. N.Dak.

Pasture renovation. W.Va.

Triangle soil test on pasture land. Conn. Storrs.

Barnyard manure for irrigated pastures in the Yellowstone Valley.
(Huntley Substation) Mont.

Pasture yields for lambs. Oreg.

Pasture experiments with sweet clover.--To ascertain the value of sweet clover as pasture for dairy cows. N.Mex.

A study of pasture values and pasture methods for horses, cattle, sheep, and swine. Kans.

An ecological study of pastures. Tex.

FIELD CROPS--Peanuts.

The study of characters and improvement of the peanut. Tex.

Peanut breeding, to increase the yield of nuts and content of oil through selective breeding. Fla.

Crop improvement by mass and individual plant selection, including small grains, corn, grain sorghums, and peanuts. Tex.

Selection work with peanuts. (Holland Substation) Va.

Variety tests with peanuts. S.C. (Holland Substation) Va.

Fertilizer experiments with peanuts. (Holland Substation) Va.

Sources of phosphorus in fertilizers for peanuts. (Holland Substation) Va.

Rotation and fertilizer experiments with corn, sweet potatoes, peanuts and Napier grass, to determine the production of corn, sweet potatoes and peanuts in rotation, using various forms of commercial fertilizers and lime, and also the best method of fertilizing Napier grass. Fla.

Peanuts, sorghums, legumes.--To keep in timely touch with subjects that are constantly coming up, not of sufficient importance for separate projects. Okla.

The production of peanuts. Ark.

Popcorn.

Popcorn--variety character record and ear row work. Mich.

The popping of popcorn. N.Y. State.

Potatoes.

Genetics and Breeding.

Potato breeding. Utah. Wash.

Potato breeding work.--To create varieties suited to Alaska. Alaska.

Potato breeding: A study of varieties and seedlings for their identification, economic value, resistance to "mosaic dwarf" and "hopper burn"; place effect on the productivity of potato seed stock; factors influencing the dropping of flowers. (Crookston, Grand Rapids, and Duluth Substations) Minn.

FIELD CROPS--Potatoes. Genetics and Breeding. (Cont.)

Breeding work on Lookout Mountain potatoes. S.C.

Potato improvement on dry land. (Judith Basin Substation) Mont.

Potato selection. Mich.

Potato investigations. Hill selection work. Oreg.

Hill selection of potatoes. Pa.

Improvement of the McCormick potato. Md.

Tuber-unit potato breeding. (Sandpoint Substation) Idaho.

Tuber selection studies with potatoes. N.Y. Cornell.

Tuber-unit potato improvement. (Aberdeen Substation) Idaho.

To determine the value of hill and tuber-unit methods of seed selection for intensifying desirable characteristics of potatoes, and if these methods can produce higher yielding strains. (Swannanoa Substation) N.C.

Selection work in Delaware late red potatoes. Del.

Potato investigations. Seed selection. (Northwest Substation, Crookston) Minn.

Seed selection work with potatoes on irrigated land (pure lines). Mont.

The effect of selecting high- and low-yielding lines of potatoes which are apparently free from degenerative diseases. Me.

Development of a variety of potatoes resistant to late blight. N.Y. Cornell.

Variety Studies.

Variety test of potatoes. (Sandpoint Substation) Idaho. (Horticultural Substation) Mont.

Varietal trial of potatoes. Oreg.

Variety tests with potatoes. (Appomattox, Bowling Green, Chatham, Holland Lightfoot, Martinsville, Staunton, and Charlotte Court House Substation) Va.

Potato variety test. W.Va.

Variety test of potatoes. (Torrington) Wyo.

Irish potatoe variety studies. Ky.

FIELD CROPS--Potatoes. Variety Studies. (Cont.)

Potato investigations. Varietal experiments. (Aberdeen Substation) Idaho.

Potato investigations. Varietal experiments. (West Central Substation, Morris) (North Central Substation, Grand Rapids) (Northwest Substation, Crookston) and (Northeast Substation, Duluth) Minn.

Potato investigations. Variety tests. W. Va.

Truck and root crops: Varietal trials with potatoes. (Union Substation) Oreg.

Variety tests of potatoes on dry land. Mont.

Variety tests of potatoes on irrigated land. Mont.

Variety test of Irish potatoes. (a) Early varieties, (b) second crop varieties. (Willard Substation) N.C.

Variety tests of potatoes. Improvement of potatoes by selection. Wis.

Variety testing and selection of high yielding strains of potatoes by the "tuber-unit" method. Wyo.

Tests with strawberries and potatoes, and blight-resistant pears. (Hood River Substation) Oreg.

Varietal trials of various market garden crops, such as Irish potatoes. Tenn.

Varietal trials, including wheat, barley, oats, field peas, corn, and potatoes. (More and Hood River Substations) Oreg.

Potato variety tests.--To find the varieties best suited to Alaska. (Sitka Substation) Alaska.

Variety experiments with potatoes, with special reference to a good late variety. Md.

Tests with late potatoes - varieties, size of seed and fertility. (Ridgely Substation) Md.

Irish potato variety test.--To determine the best varieties for western North Carolina. (Swannanoa Substation) N.C.

To determine the best variety of potatoes for local use. (Dickinson Substation) N.Dak.

A study of the varieties of potatoes with a view to improving those best adapted to Pennsylvania conditions. Pa.

Varieties adapted to the Appalachian region of Virginia, also selections of promising strains by the "tuber-unit" method; fertilizer requirements; farm storage of potatoes. Cultural methods. Va.

FIELD CROPS--Potatoes. Variety Studies. (Cont.)

Irish potato. Variety, culture, and fertilizer tests. (Holly Springs and Raymond Substations) Miss.

Cultural Studies.

Potatoes--cultural experiments. Mich.

Potato culture experiments. W.Va.

Cultural practices with Irish potatoes. (Willard Substation) N.C.

Cultural investigations with Irish potatoes. Okla.

Cultural trials for potatoes: (a) Size of piece for planting; (b) method of cutting for seed; (c) comparison of cut and uncut seed; (d) comparison of cut seed with and without landplaster; (e) time of planting; (f) depth of planting; (g) hill v. flat cultivation. Oreg.

Irish potato studies. Study of cultural methods and varieties at the higher and lower altitudes in Arizona. Ariz.

Potato culture in central Illinois.--Variety studies, northern and home-grown seed, insects and diseases. Ill.

Methods of planting potatoes. (Northwest Substation, Crookston) Minn.

Potato investigations. Cultivation; surface, ridged. (West Central Substation, Morris) Minn.

Potato culture investigations. Ridging v. level culture. (Northeast Substation, Duluth) Minn.

Ridging v. level cultivation of potatoes. (Judith Basin Substation) Mont.

Potato culture investigations. Date of planting. (Northeast Substation, Duluth) Minn.

Effect on tuber formation of planting main crop potatoes at different dates. Conn. Storrs.

Potato investigations. Early v. late planting. (North Central Substation, Grand Rapids) Minn.

Time of planting late potatoes. (Belair, Marion, and College Park Substations) Md.

Rate of planting potatoes. (Sandpoint Substation) Idaho.

FIELD CROPS--Potatoes. Cultural Studies. (Cont.)

Potato culture investigations. Spacing of rows. (Northeast Substation, Duluth) Minn.

Rates of planting potatoes to determine the best distance between hills. Conn. Storrs.

Distance of planting dry land potatoes. (Judith Basin Substation) Mont.

Effect of the distance apart in row and of missing hills on yield and quality of potatoes. Wyo.

Depth of planting potatoes. (West Central Substation, Morris) Minn.

Comparison of effect of fall plowing, spring plowing, and no plowing on corn, potatoes and wheat. (Northwest Substation, Crookston) Minn.

Potato culture investigations. Spring v. fall plowing. (Northeast Substation, Duluth) Minn.

Seed Studies.

Seed potato production. Wash.

Seed potato development. (Irrigation Substation) Wash.

Seed potato improvement. (North Central Substation, Grand Rapids) Minn.

Improvement of potato seed. N.J.

Potato seed improvement on dry land. Mont.

Potato seed improvement on irrigated land. (Corvallis Horticultural Substation) Mont.

Potato seed studies: Tests of crosses for the U.S.D.A. E.I.

A study of growth and type factors which influence the value of potatoes for seed.--To determine the effect of irrigation, cultivation, weather, rogueing, and selection of tuber and vine types on the succeeding crop. N.Dak.

Effect of size and kind of seed upon the yield of potatoes. (Torrington) Wyo.

Effect of using small cut seed pieces and large cut seed pieces. N.H.

Various methods of cutting seed potatoes. Pa.

FIELD CROPS--Potatoes. Seed Studies. (Cont.)

Effect of different sized portions of seed at different moisture content on the early growth of the potato plant. Wyo.

Effect of the size and portion of seed per tuber used on the growth and yield of the potato plant. Wyo.

Soil type influences on the value and character of potatoes for seed purposes. N.Y. Cornell.

Environment vs. potato seed selection. (Horticultural Substation) Mont.

The effect of immaturity in potatoes for seed purposes. N.Y. Cornell.

Comparison of sprouted and good potato seed. Oreg.

Tests of sources of Irish potato seed. S.C.

Effect of the source of seed upon the yield of potatoes. (Torrington) Wyo.

Effect of climate on productiveness of the potato. A comparison of northern grown potato seed with seed grown in southern New Hampshire from the same strain. N.H.

Testing value of different sources of seed.--To determine comparative value of Maine-grown seed, second crop seed produced in the Coastal Plain and western North Carolina and seed in different stages of maturity, as the most desirable seed for the early crop of Irish potatoes in eastern North Carolina. (Willard Substation) N.C.

Potato investigations. Source-of-seed and fertilizer tests. Kans.

To determine the relative merits of northern grown v. southern grown potato seed. Ky.

Investigations with seed potatoes. A comparison of home-grown with northern-grown seed. Mo.

To compare Indiana-grown seed potatoes with seed stock from Michigan and Wisconsin and also selections from these stocks. Ind.

To determine whether or not seed can be produced in western North Carolina that will be of value for eastern North Carolina. (Swannanoa Substation) N.C.

A comparison of seed source stock and seed source areas of potatoes for Pennsylvania. Pa.

Comparison of yields, growth, and disease of North Dakota potatoes when used for seed in more southernly States. N.Dak.

FIELD CROPS--Potatoes. Seed Studies. (Cont.)

Potato selection for seed purposes.--To determine (a) the value of western Nebraska seed potatoes compared with those from other regions (b) the value of irrigated potatoes for seed purposes (c) to study the general cultural factors influencing the production of seed potatoes and (d) to study varieties in various parts of Nebraska. Nebr.

Experiment on certified seed with Irish potatoes. Ga.

A comparison of New Hampshire certified seed with seed from other sources. N.H.

Seed potato growing in high altitudes. Colo.

Irrigated v. dry-land potatoes for seed. (Huntley Substation) Mont.

Environmental factors influencing potato seed selection on dry land. Mont.

Environmental factors influencing potato seed selection on irrigated land. Mont.

Potato seed certification. N.H.

Comparison of certified and non-certified potato seed. S.C.

Potato culture investigations. Variation of yield within variety of certified stock. (Northeast Substation, Duluth) Minn.

The value of "certified" v. "common" seed potatoes. (Jackson Substation) Tenn.

Irish potato seed improvement.--To determine the value or superiority of certified or inspected seed stock over uncertified or uninspected stock. (Baton Rouge Substation) La.

The handling of potato seed.--To determine the effect of various ways of handling seed potatoes on the crop. N.Dak.

Seed treatment materials and methods. Cereals and potatoes. Oreg.

To develop a method of producing disease-free potato seed and increase of such seed for distribution to potato growers. Ky.

Fertilizer Experiments.

Potato investigations. Fertilizer tests. (Northwest Substation, Crookston) Minn.

Fertilizer tests of Irish potatoes. S.C.

FIELD CROPS--Potatoes. Fertilizer Experiments. (Cont.)

Mineral nutrient requirements of the potato plant. Md. (A)

The kind and amount of fertilizer best suited for potatoes. N.J.

Soils and fertilizer investigations. Complete fertilizers on potatoes.
(Northeast Substation, Duluth) Minn.

Fertilizer needs of potatoes in non-manure rotations. R.I.

A study of methods of applying fertilizers for potatoes. N.J.

Continuous fertilizer experiment.--To determine whether or not certain potato difficulties are associated with fertilizer practices. Me.

Potato investigations. Effect of commercial fertilizer on potato yield and quality. Oreg.

Potash tests on potatoes. N.H.

Potash experiments.--To study the effects and value of different forms of potash with cotton, corn and potatoes on various types of soil. N.C.

A study of the effect of sulphur in potato soils, potato yields, and potato diseases carried in the soil.--To determine the effects of varying amounts of sulphur on the acidity of the soil, the yield of potatoes on potato disease organisms, particularly scab, and the rate of application to control scab. N.Dak.

Spraying Experiments.

Spraying and dusting of potatoes. Ohio.

A comparison of sprays and dusts on potatoes. Conn. State.

Investigations in potato culture. Bordeaux spray studies. (Northeast Substation, Duluth) Minn.

Effect of spraying with Bordeaux, on yield of early and late potatoes. Conn. Storrs.

To determine the effect of pressure on the protection afforded by Bordeaux mixture. Effect of number of nozzles used per row in spraying on late blight control. Degree of control of late blight obtained with different Bordeaux mixtures and Burgundy mixture. N.H.

Spraying potatoes with Bordeaux mixture.--To determine the effect of Bordeaux mixture on the vigor of potato vines and on the yield, the effects on insects and diseases, and the number of and proper times for such applications. N.Dak.

FIELD CROPS- Potatoes. Snraying Experiments. (Cont.)

Spraying v. dusting tests. Fruit trees and potatoes. Oreg.

Potato spraying for the control of tip-burn. Iowa.

Miscellaneous.

Potato experiments. (Worland) (Archer) Wyo.

Potato investigations. Colo.

Potato production experiments. Idaho.

Studies relative to the growing of potatoes. N.J.

A study of the relation of vigor to yield in Irish potatoes. (Willard Substation) N.C.

Relation between the nature of the growth of the potato plant and yield. Wyo.

Comparison of healthy potato strains.--To determine the relative importance of disease and strain in a potato variety, as regards quality and yield rate. Me.

Potato investigations. Rotation tests. (Northwest Substation, Crookston) Minn.

Potato rotations. (North Montana Substation) Mont.

Irrigation of potatoes. (Huntley and North Montana Substations) Mont.

Irrigated v. dry land potatoes. (Judith Basin and North Montana Substations) Mont.

Methods of irrigating potatoes. (Huntley and Corvallis Substations) Mont.

Potatoes in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

Comparison of potatoes selected from pedigreed tubers, hill-selected tubers, bin-selected tubers, and bulk tubers. S.Dak.

Potato storage. (South Mississippi Substation) Miss.

A study of factors involved in the production, storage, and handling of Irish potatoes. Ark.

Physiological and biochemical aspects of potato storage and transportation. Md.. (A)

FIELD CROPS--Potatoes. Miscellaneous. (Cont.)

Storing first crop of Irish potatoes in sweet potato storage house.--To determine the value of sweet potato storage house for storing first crop of Irish potatoes. (Willard Substation) N.C.

Potato culture investigations. Warm v. cold storage of seed stock. (Northeast Substation, Duluth) Minn.

A study of degeneracy in potatoes- rapidity- factors causing, and means of control. Nebr. (A)

A study of the causes of deterioration in potatoes. Conn. Storrs.

Reason for the failure of potato tubers to develop properly in parts of New Mexico. N.Mex. (A)

Regeneration in potato tubers. Md. (A)

Production of seedling potatoes. Pa.

Ecological factors affecting tuber, stolon, and root development in potatoes. N.Y. Cornell.

To determine the relative merits of strains of potatoes of a given variety after the disease factors have been eliminated, and to determine sources from which high-yielding strains may be obtained. Ky.

Yield of potatoes as governed by disease. (Hermiston Substation) Oreg.

Comparison of different selections of potatoes. (Sandpoint Substation) Idaho.

A cytological study of potato species and hybrids to determine why disease resistance of wild types and yield and quality of cultivated varieties are so difficult to combine in a new variety. (Brookstock Substation) Me.

Strain and source trials with potatoes, particularly to check up certification. Conn. Storrs.

Range Studies. (See also ANIMAL HUSBANDRY, BEEF CATTLE, Grazing and Range Experiments.)

Range improvement. (a) Study of the ground cover under three types of grazing. (b) Life history studies of the more important forage grasses. (c) Meteorological factors as they effect the composition of the range. (d) Reseeding studies. Colo.

A study of range improvement through fencing. Ariz.

Revegetation and maintenance of California foothill range lands. Calif.

Plains crops and management. Colo.

Range reseeding. Utah.

Range survey. Utah.

FIELD CROPS—Rape.

Forage crop investigations. Seeding and cultural trials for production of rape. Oreg.

Rape as material for silage. Iowa.

Residual Effects of Crops. (See also Rotations.)

To determine the effect of cropping systems upon the production of succeeding crops. Wash.

The effect of one crop on another, especially to ascertain whether good or bad influences are due to toxins or to bacteria. N.Y. State.

Effect of crops on those which follow. Minn.

The cumulative effect of cropping. Calif.

Extent and nature of influence exerted upon plants by previous growth of other kinds of plants. R.I. (A)

A study of various crop rotations and the effect of the preceding crop upon yield. 50 tests in all. Ohio.

Effects of certain crops on soil fertility. Plots planted to various crops and combinations of crops, followed by wheat as an indicator of the fertility. Miss.

Investigation of the value, nature and duration of the residuary effects of vegetable matter when applied to soils of different texture. Mich.

A study of varietal adaptations and fertilizer requirements of Red River Valley soils. The effects of varied crop sequence. (Northwest Substation, Crookston) Minn.

Effect of legumes upon subsequent crops under varying conditions. Ark.

The comparative after effects of various legumes and of grass as shown by succeeding corn crops. (Jackson Substation) Tenn.

Green manuring experiments with cowpeas, to determine the effect of cowpeas when turned under on non-legumes immediately following. (Jackson Substation) Tenn.

To study effect and to eliminate any bad effects on growing tobacco after cowpeas. (Oxford and Reidsville Substations) N.C.

FIELD CROPS--Residual Effects of Crops. (Cont.)

Crop relations, comparative effect of tobacco and other crops on yields of succeeding crops. Md.

Effect of various crops, both when turned under and when removed, on tobacco immediately following. (Clarksville Substation) Tenn.

Effect of fall v. spring seeding of timothy upon yield of wheat. Ohio.

Effect of sunflowers upon yield of succeeding crops. (Huntley and Judith Basin Substations) Mont.

Effect on cabbages of four preceding crops of the same year. R.I.

The deleterious effect of sorghums on the soil and on the subsequent crops. Ariz.

Rice.

Rice improvement and methods of production. Tex.

Method of seeding rice.--To determine the effect of date of planting, rate of seeding, depth of covering seed, and manner of sowing. (Rice Substation, Crowley) La.

Fertilizers:- Effect upon yield and quality of rice.--To determine the effect on yield of rice of nitrogen, phosphoric acid, potash, lime and manure, singly and in combinations. (Rice Substation, Crowley) La.

Rotations:- Effect upon yield and quality of rice (a) 2-year with rice and soy beans, (b) 2-year with rice and pasture, (c) 4-year with rice, oats, corn and soy beans. (Rice Substation, Crowley) La.

Rice nursery studies (irrigated). Botanical and agronomical studies of rice collected from all parts of the world. (Rice Substation, Crowley) La.

Resistance of rice varieties to Helminthosporiose.--To study resistance of varieties of rice to Helminthosporium oryzae, with a view of getting a resistant variety. Porto Rico.

Rice investigations in Sacramento Valley. Calif.

Rice:- Increase plats (irrigated).--To secure yields of promising varieties under field conditions, along with known varieties of rice as checks. (Rice Substation, Crowley) La.

Rice:-Distribution and study of varieties. Supplying the better varieties of rice developed to rice farmers for further increase and study. (Rice Substation, Crowley) La.

FIELD CROPS --Root Crops.

Variety test of roots. (North Central Substation, Grand Rapids) Minn.

Track and root crops: Varietal trials with stock beets, turnips, rutabagas and carrots. (Union Substation) Oreg.

Root crop varieties in northern Montana. (North Montana Substation) Mont.

Root varieties.--To determine the most practical varieties of roots to raise on a farm, considering the yield per acre, difficulty of harvesting and cost of raising in storage. (Langdon Substation) N.Dak.

Comparison of various root crops. (Sandpoint Substation) Idaho.

Root crops in the Judith Basin. Mont.

Root crop rotations for northern Montana. Mont.

To determine the relative yields of various root crops. (Dickinson Substation) N.Dak.

Root crop tests.--To ascertain how various root crops, particularly mangels, rutabagas, beets and carrots, will be suited to Alaskan conditions. (Narsarsua Substation) Alaska.

Miscellaneous root crops. Mich.

Rotations.

Rotation experiments. Crop rotations. Soil fertility rotations. (Burns Substation) Oreg.

Rotation experiments. (Bowling Green and Chatham Substations) Va. (Archer and Torrington Substations) Wyo.

Crop rotation experiments. (Northwest Substation, Crookston) Minn.

Crop rotation investigation. (Northeast Substation, Duluth) Minn.

Studies of various crop rotations. Del.

A comparative study of various crop rotations. (Jackson Substation) Tenn.

Crop rotation investigations. Field C rotations; and Field T rotations. Minn.

Systems of crop rotations. Ala.

FIELD CROPS--Rotations. (Cont.)

Rotation v. continuous culture test.--To determine the difference as observed in yield between crop rotation and continuous culture with special reference to corn, cowpeas and velvet beans, and to study the effect of each of these crops on the physical condition of the soil. Guam.

Fertility investigations with continuous cropping (corn) on Wisconsin drift soil. Iowa.

Crop rotation and fertility. Okla.

Rotations and fertility tests. Utah.

Fertility investigations with a two-year crop rotation system on Wisconsin drift soil. Iowa.

Fertility investigations with a three-year crop rotation system on Wisconsin drift soil. Iowa.

Fertility investigations with a four-year crop rotation system on Wisconsin drift soil. Iowa.

Fertility investigations with a five-year crop rotation system on Wisconsin drift soil. Iowa.

Fertility experiments in a cowpea-corn rotation. Tenn.

Fertilizer rotation experiments. Ala.

The use of fertilizers in a rotation of corn, wheat, hay and tomatoes. (Ridgely Substation) Md.

Fertilizer and liming experiments in a five-year crop rotation. (Murfreesboro Substation) Tenn.

Miscellaneous fertilizer experiments in connection with a three-year crop rotation. (Crossville Substation) Tenn.

Fertilizer experiments to determine the amount of fertilizers to use and the time of application in rotations. Iowa.

Fertilizer experiments with truck crops in a three-year rotation on brown silt loam in soil of the corn belt. Ill.

Commercial fertilizers applied to rotations. (Hermiston Substation) Oreg.

Fertilizers and manures applied to different crops of a rotation. Ohio.

The use of acid phosphate, potash and nitrogen, separately and in combination, in a 2-yr. rotation of wheat or barley and potatoes, the fertilizers to be applied on the cultivated crop. (West Central Substation, Morris) Minn.

FIELD CROPS--Rotations. (Cont.)

Nitrogen, phosphoric acid and potash in a 2-year rotation with rice and soy beans.--To determine the effect of these applied singly and in combination on rice in a two-year rotation with soy beans. (Rice Substation, Crowley) La.

The use of acid phosphate in amounts varying from 0 to 200 pounds per acre on a two-year rotation of wheat and clover. (West Central Substation, Morris) Minn.

The use of acid phosphate, of rock phosphate with manure and acid phosphate with manure, and the use of lime with all the above combinations, on a 4-year rotation of corn, wheat, oats and clover. (West Central Substation, Morris) Minn.

Comparison of various phosphates at various rates under both limed and unlimed conditions in a standard 3-year crop rotation. (Crossville Substation) Tenn.

Compost v. acid phosphate in a 3-year rotation. A comparison of yields from compost v. acid phosphate on corn, cotton and oats. (North Louisiana Substation, Calhoun) La.

Cullers' rotation of crops, including tests of rock v. acid phosphate. Ala.

A study of the effects of different fertilizers, lime and plaster, and different amounts and sources, on the production of corn, oats, and mixed clover and timothy in rotation. Pa.

Where fertilizers may be applied to best advantage in a given rotation, and whether in small quantities frequently or large quantities less frequently. Va.

Fertilizing the dairy farm rotations. (a) Shall the manure be applied on the corn or hay? (b) Does it pay to reinforce manure (12 tons on corn) with acid phosphate? (c) Does it pay to add fertilizer (as a starter) to manure (12 tons) on corn? Conn. Storrs.

Continuous planting and biennial cropping.--(a) To determine effect in soil and crop of continuous planting, (b) to test effect on soil and crops by addition of manure and by plowing under cover crops. (Meloland (Imperial Valley) Substation) Calif.

Silage corn with grass and clover seed in it, grass, oat and pea hay followed by rutabages; annually 4 cords cow manure with straw bedding v. sawdust bedding, the latter with different amounts of phosphorus and of potassium, all compared with fertilizer alone. R.I.

Fertilizer experiments with sun-cured tobacco and other crops grown in rotation with it. (Bowling Green Substation) Va.

Fertilizer experiments with dark tobacco and crops grown in rotations with it. (Appomattox and Charlotte Court House Substations) Va.

FIELD CROPS: Rotations. (cont.)

Fertilizer experiments with bright tobacco and crops grown in rotation with it. (Capeham Substation) Va.

Soil experiment fields: Including various rotations with various fertilizer treatments. (Lexington, Berea, Greenville, Russellville, Lone Oak, Mayfield, Fariston, Lincoln, Campbellville, and Hopkinsville Substations) Ky.

Crop rotation and soil fertility experiments. Tests of crop rotations, commercial fertilizers, and manure. Kans.

Crop rotation and fertilizer experiments.--To make comparative studies of various rotations and fertilizer applications in regard to their effect upon crop and soil. Nebr.

Crop rotation and fertilizer studies.--To determine the relative merits of several different crop rotations and to compare different systems of fertilization, including commercial fertilizers and farm manures. Ind.

Studies in crop rotations.--To study the most profitable point in the rotation to apply the usual fertility measures practiced by Maryland farmers. Md.

Farm rotations: Potatoes, rye as green manure for squashes, onions, wheat and rowen, grass. R.I.

Effect of soil treatment on different rotations and on continuous corn. Ill.

Use of crop residues applied at rates from 0 to 2 tons per acre upon rotation of corn and wheat. (West Central Substation, Morris) Minn.

Rotations. A comparison of the value of green manures, barnyard manures, cultivated crops and summer fallow. Wyo.

Barnyard manure at rates from 0 to 32 tons per acre upon 4 year rotation of corn, wheat, barley, clover. (West Central Substation, Morris) Minn.

Cereals: Crop rotation trials covering one-, two- and three-year rotation systems. (Union Substation) Oreg.

Three two year rotations in which two tons per acre of manure are applied: oats and wheat, oats and barley, and wheat and barley. (West Central Substation, Morris) Minn.

Three year rotation of oats, clover, and corn applying six tons of manure preceding corn. (West Central Substation, Morris) Minn.

FIELD CROPS--Rotations. (Cont.)

Five year rotation of oats, clover hay, timothy and clover hay, corn, and wheat, applying ten tons manure, preceding corn. (West Central Substation, Morris) Minn.

Alfalfa in rotation, following early potatoes for four years preceding corn. R.I.

Eight year rotation without manure, four years cereal crop and four years alfalfa. (West Central Substation, Morris) Minn.

Medium red clover in rotation of corn, wheat, barley, and clover. (West Central Substation, Morris) Minn.

Sweet clover as a crop for soil improvement in a 3-year and a 4-year rotation. Ill.

Fertilizer, lime and green manure experiments in a rotation of cowpeas and wheat. Tenn.

Forage crops investigations. Succession of crops or rotation trials with vetches and other forage crops. Oreg.

Rotation experiment.--To compare yields of crops grown in one, two and three year rotations with and without legumes. (Swannanoa, Kingsboro, and Statesville Substations) N.C.

Four year rotation with peas and oats, timothy and clover. (Astoria Substation) Oreg.

Corn, potatoes, rye and rowen, one to three years of grass, including one rotation with and one without legumes. R.I.

Potato investigations. Rotation tests. (Northwest Substation, Crookston) Minn.

Rotations:--Effect upon yield and quality of rice (a) 2-year with rice and soy beans, (b) 2-year with rice and pasture, (c) 4-year with rice, oats, corn and soy beans. (Rice Substation, Crowley) La.

Rotations.--To develop the best system of rotations adapted to the strawberry section, with the idea of increasing humus and soil fertility in the most economical manner. (Fruit and Truck Substation, Hammond) La.

Types of rotations with and without tobacco. (Appomattox Substation) Va.

Rotation and fertility investigations. Idaho.

Field study of comparative crop rotations with reference to effect of certain crops on succeeding crops and on the permanent fertility of the soil. (Highmore, Eureka and Cottonwood Substations) S.Dak.

Crop rotation and fertilizer experiments.--To determine the influence of various rotations maintaining soil fertility. Mo.

FIELD CROPS--Rotations. (Cont.)

The influence of rotations upon the maintenance of soil fertility.

S.Dak. (A)

Rotation of crops, including continuous cropping of corn, cotton, and oats, with two, three, and four-year rotations with legumes planted in and between regular crops; also silage corn and crimson clover.

(Starkville, Holly Springs, and Raymond Substations) Miss.

Rotations: corn, early potatoes, five years of alfalfa with grass. R.I.

To determine the advisability of growing alfalfa, corn and annual legumes in a rotation on bottom land. Okla.

Continuous cropping without clover or manure. (Northeast Substation, Duluth) Minn.

Study of crop rotations v. continuous cropping. Del.

Alternate and continuous cropping. Minn.

Rotation of crops to compare yields with continuous cropping yields of the same crops. (Hermiston Substation) Oreg.

A study of varietal adaptations and fertilizer requirements on Red River Valley soils. The effects of varied crop sequence. (Northwest Substation, Crookston) Minn.

Study of various crop rotations and the effect of the preceding crop upon yield. 50 tests in all. Ohio.

Studies of crop rotations for northern Wisconsin. Study of laws underlying adaptation of crops. Wis.

Fertility rotations. Eighteen rotations on Willamette silty clay loam, initiated 1909 and 1915. Oreg.

Dry land rotations. Mont.

Fertility rotations. Twenty-nine cooperative dry land rotations, (Moro, and Burns Substations) Oreg.

Crop rotation experiments.--To determine (a) what crops if any can be partly or entirely substituted for bare fallow in dry-land grain production, (b) the best order or sequence to grow cultivated crops in a rotation with grain on dry land, and (c) the effects on yields of grain of turning under various grain and leguminous crops for green manure as compared with bone fallow without manurial or fertilizer applications. (Moro Substation) Oreg.

Dry land rotation and tillage experiments.--To determine the proper rotation and crop sequence, and the most desirable tillage methods for farming in western North Dakota. (Dickinson and Hettinger Substations) N.Dak.

FIELD CROPS--Rotations. (Cont.)

Irrigation rotation experiments. (Scottsbluff Substation) Nebr.

Irrigation rotation trials.--To establish practicable and profitable rotation of crops under irrigation that are especially applicable to conditions in western North Dakota, with special reference to the growing of sugar beets, potatoes and alfalfa for both hay and hog pasture. Also the effect of continuous cropping of wheat, potatoes, alfalfa, and sugar beets under irrigation. (Williston Substation) N.Dak.

Fertility rotations.. Cooperative irrigation rotations. (Hermiston, Burns, and Medford Substations) Oreg.

A comparison of crop yields and soil effects from two systems of farming, the first denominated a grain system of farming and the second a live-stock system of farming. S.Dak.

A comparison of various soil treatments in a rotation of corn, barley, wheat, and either red clover or alfalfa. (Joliet Substation) Ill.

Rotation experiment for high altitude farms. Wyo.

Demonstration rotations on large area plats with (a) corn and cowpeas, (b) cotton in regular rotation. (North Louisiana Substation, Calhoun) La.

Rotation experiments.--To determine the effect (a) of various rotations upon the yield of crops, and economic returns per unit area, (b) of the various cropping systems upon the moisture and humus of the soil. (Davis Substation) Calif.

Influence of rotation upon the crop-producing power of the soil, without treatment. (Kearney Park Substation) Calif.

The influence of legume and non-legume crops in maintaining soil fertility under a five-year rotation. N.J.

Improving a soil under a 5-year rotation of general farm crops as compared with improving it with sweet clover as a self-seeding crop. N.J.

Three-year rotation with kafir, wheat and cowpeas. Okla.

Four-year rotation of kafir, wheat and cowpeas. Okla.

Maintenance of soil fertility. A study of the influence of continuous culture as compared with rotation culture. N.Dak.

Maintenance of soil fertility.--A comparison of the influence of cropping systems, with and without manure, in five different 4-year rotations, four different 6-year rotations and one 3-year rotation. N.Dak.

FIELD CROPS--Rotations. (Cont.)

Comparison of 28 crop rotations from the standpoint of yield and quality of crops, and likewise from the standpoint of the effect upon soil. S.Dak.

Special rotations. Ark.

Combination fertilizer and rotation experiments. Ark.

Crop rotation experiments in cane farming.--To determine the relative effects of continued cane cropping on the same soil and a rotation system on the yield of cane and sugar production on St. Croix soils. Virgin Islands.

Manure and fertilizer experiments in a 5-year crop rotation. Tenn.

Fallow in the Judith Basin crop rotation. Mont.

Fallow in northern Montana crop rotations. Mont.

Fallow on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Rutabagas.

Variety tests of stock rutabagas. (Northwest Substation, Crookston) Minn.

Rye.

Rye breeding. Mich. Wis.

Breeding rye. N.Y. Cornell.

Breeding work with rye. S.C.

Rye, oat, and barley breeding. Wis.

Practical rye breeding.--To produce a hardy, high-yielding variety of rye with large and uniformly colored grains. N.Dak.

Rye head selection. Mich.

Small grain breeding.--Pure line selections with wheat and Abruzzi rye. N.C.

Cereals: Breeding and selection of pure strains of wheat, barley, oats and rye. (Union Substation) Oreg.

The continuous growing of wheat and rye with and without a legume green manure crop and without commercial nitrogenous fertilizer. N.J.

The isolation of pure forms of rye by continuous selection to produce self-fertilized lines and to obtain improved varieties for Minnesota. Minn.

Cereal investigations. Nursery trials with wheat and rye selections and wheat-rye hybrids. Oreg.

FIELD CROPS--Rye. (Cont.)

The culture and improvement of small grains, including wheat, oats, barley, rye, etc. Ariz.

Rye variety tests. Ala.

Rye variety tests.--To test varieties of winter rye in order to find those which are entirely hardy in interior Alaska. (Fairbanks, Matanuska, and Rumpart Substations) Alaska.

Variety tests of rye. (North Central Substation, Grand Rapids) Minn.
(Appomattox, Bowling Green, Chatham, Lightfoot, Martinsville, Staunton, and Charlotte Court House Substations) Va.

Variety test and rate of seeding winter rye and winter wheat. (North Central Substation, Grand Rapids) Minn.

Small grain variety tests.--Testing of standard varieties of wheat, oats, rye and barley. (Statesville Substation) N.C.

Cereals: Varietal trials with wheat, barley, oats, peas, flax and rye. (Union Substation) Oreg.

Cereal variety tests.--To test new and standard varieties of spring wheat, oats, barley and winter rye, as to yielding capacity, resistance to disease and trade value as measured by milling and baking tests. N.Dak.

Experiments with rye.--To determine what varieties are best adapted to this region, especially in winter hardiness. (Dickinson Substation) N.Dak.

Rye varieties in the Gallatin Valley. Mont.

Rye production: Varieties, breeding and cultural methods. Ark.

Rye: Variety tests and cultural experiments. Va.

Variety testing, breeding, acclimatization and cultural studies of small grains.--To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley and winter emmer. Nebr.

Rate and date of seeding oats, wheat, barley, and rye. Minn.

Rye, emmer, and miscellaneous grains. Idaho.

Effect of rye as a winter crop for early spring plowing and sowing for later work in vegetable production. Md.

Winter rye in the Judith Basin crop rotation. Mont.

FIELD CROPS--Rye. (Cont.)

Winter rye in northern Montana crop rotations. Mont.

Spring rye varieties in northern Montana. Mont.

Studies of varietal resistance of wheat, barley, rye and oats to root and culm rots. Minn.

Silage Crops. (See also FEEDING STUFFS AND ANIMAL NUTRITION -- Silage)

Variety tests of silage crops. (Hermiston Substation) Oreg.

Comparative tests of individual species and combinations for silage, hay and roots. (Astoria Substation) Oreg.

Comparison of various kinds of silage and roots for northern Wisconsin. Wis.

Variety tests of corn for the production of silage. (Aberdeen Substation) Idaho.

A study of types of corn for silage. The loss of nutrients in the process of silage making. The comparative feeding value of corn silage from types of corn ranging from a type not maturing ears to a type producing practically mature grain in the latitude of southern New York. N.Y. Cornell.

Cultural tests of corn for silage production. Idaho.

A study of silage corn and supplementary silage crops, especially sunflowers and soy beans, including such factors as the stage at which corn is most valuable for silage purposes per pound of dry matter; the variety which will produce the greatest amount of dry matter per acre; the effect of an irregular stand on the yield of corn; the productivity and adaptation of sunflowers for silage purposes; the varieties of soy beans best suited for silage purposes; the effect of planting date on the development and yield of corn. N.Y. Cornell.

Comparison of yields of corn, peas and barley, and sunflowers for silage purposes. (Union Substation) Oreg.

Soft corn silage. Iowa.

Corn and soy beans for silage. Ohio.

Improvement of sunflowers for silage production by selection and breeding. Idaho.

Rate of seeding sunflowers as related to yield of silage. (Aberdeen Substation) Idaho.

A comparison of sunflowers, sorghum and corn for silage. Ga.

Crops for silage, including corn, different varieties of sorghum, and sunflowers. Miss.

FIELD CROPS--Silage crops. (Cont.)

A comparison of the value of sweet clover and sunflower silage with corn silage. N.Dak.

To determine the best stage of maturity at which to harvest sweet clover and sunflowers for silage and the optimum moisture content for making silage of these crops. N.Dak.

To determine the practicability of utilizing sweet clover as a silage crop, the best method of preparing such silage, and its value as a feed for farm animals. N.Dak.

Rape as material for silage. Iowa.

Combination crops for silage: sunflowers and peas; oats and peas; barley and peas; wheat and peas. (Burns Substation) Oreg.

Sorghums. (See also Broom Corn, Kafir and Sudan Grass.)

Inheritance in grain sorghums. Tex. (A)

Breeding experiments with wheat, oats, corn, and sorghums. Kans.

Sorghum breeding.--The selection of honey or Japanese seeded sorghum for higher yield of juice and increased sugar content. N.C.

Improvement of corn and sorghum by selection. (Meloland (Imperial Valley) Substation) Calif.

Improvement of saccharine sorghum by selection. Wis.

Crop improvement by mass and individual plant selection, including small grains, corn, grain sorghums, and peanuts. Tex.

Studies of varieties, culture and improvement of forage crops, such as sorghums and grasses. Ariz.

Sorghum variety tests. Miss.

Variety tests of grain sorghums.--To determine the yields of different varieties of grain sorghums, as shown by competitive tests. Okla.

A comparison of the leading varieties of sorghum both for green and dry forage. Ala.

A comparison of the most important grain sorghums with corn for grain and forage production. Mo.

FIELD CROPS--Sorghums. (Cont.)

Varietal experiments with grain sorghum.--To determine whether grain sorghum will mature in the average season, and if so, to compare its yield with corn and other grain crops. (Dickinson Substation) N.Dak.

Variety tests of sweet sorghums.--To determine the yields of different varieties of sweet sorghums as shown by competitive tests. Okla.

Varieties of sorghum for sirup. Ala.

To determine the best method of planting grain sorghums and cowpeas together. Okla.

Annual forage crops--millets, Sudan grass and other sorghums. Ohio.

Annual forage crops--millet, sorghum and Sudan grass.--To test the relative forage yields of the annual grasses, millet, sorghum and Sudan grass. (Dickinson Substation) N.Dak.

The production of sirup, grain and forage from sorghum in Arkansas. Ark.

Millets, sorghums and Sudan grass in the Judith Basin. Mont.

Millet, sorgos and Sudan grass in northern Montana. Mont.

Peanuts, sorghums, legumes.--To keep in timely touch with subjects that are constantly coming up, not of sufficient importance for separate projects. Okla.

Studies of drought-enduring forage crops, e.g., sunflowers, millets and sorghums. S.Dak.

Soy Beans.

Genetic studies in soy beans. Ill.

Soy bean breeding. Ind.

Soy bean breeding and cultural studies. Wis.

Soy bean breeding for varieties especially suited to Iowa conditions. Iowa.

Breeding for high and low oil in soy beans. Ill.

Soy bean breeding.--Pure lines isolated from Heberlandt, Virginia and Mammoth Yellow to determine their place among the established varieties. N.C.

Breeding soy beans for northern Wisconsin sandy soils, (a) soybean culture experiments in northern Wisconsin, (b) variety tests with soy beans on sandy soils. Wis.

FIELD CROPS--Soy Beans. (Cont.)

Effect of selection on the oil and protein content of the soy bean. Ill.

Soybean selection for increased oil.--The selection and study of pure lines of Mammoth Yellow for yield and oil content. N.C.

Selection and varietal trials with soy beans. Oreg.

Soybean seed improvement.--Seed selection work with Haberlandt. No. 38 for early maturity and more upright habit of growth. (Swannanoa Substation) N.C.

Soy beans: Variety, cultural and breeding work. Ohio.

Soy beans - variety tests. Ala.

Varietal trials of soy beans. Del.

Variety trials of soy beans for hay and seed. Minn.

Variety tests with soy beans. S.C. (Appomattox, Bowling Green, Chatham, Holland, Lightfoot, Martinsville, Staunton, and Charlotte Court House Substations) Va.

Soy bean variety test.--To determine the leading varieties. La.

Variety test of field peas, soy beans and field beans. (North Central Substation, Grand Rapids) Minn.

Variety tests of corn, wheat and soy beans. (Ridgely Substation) Md.

Soybean varieties in the Judith Basin. Mont.

Variety tests of soy beans. (Hermiston Substation) Oreg.

Forage crops: Varietal trials with soy beans for silage purposes. (Union Substation) Oreg.

A morphological classification of the varieties of soy beans. Mo.

Soy beans--varietal tests and cultural studies. Mich.

Soy bean variety tests and cultural methods.--To determine varieties and cultural methods adaptable to North Dakota. N.Dak.

Soy bean investigations. Adaptation of imported varieties, selection of superior types and tests of yields for hay and seed of varieties. Md.

FIELD CROPS--Soy Beans. (Cont.)

A study of the adaptation of the important varieties and selections of soy beans to the various soil types of the State. Mo.

Varieties of soy beans and soy beans v. oats in rotation. Pa.

Determination of the relative value of different varieties of soy beans for both hay and seed, and the adaptation of the several varieties to the different sections of the State. Ill.

Soy bean variety test.--To determine the best varieties of soy beans for hay and seed production. (Swannanoa Substation) N.C.

Soy beans: Varieties, culture and yields of hay and grain. Va.

Soy bean investigations, including variety tests, methods of seeding and planting alone and with other crops. W.Va.

Cultural experiments with soy beans, including (a) time of seeding, (b) method of seeding and (c) rate of seeding. Mo.

Rates, dates and methods of planting soy beans and soy bean mixtures. (Northwest Substation, Crookston and North Central Substation, Grand Rapids) Minn.

Date and rate of seeding and methods of cultivation of soy beans. Minn.

Date-of-planting experiments with both corn and soy beans. Tenn.

A comparison of distance apart to plant corn, corn and soy beans, and sunflowers. Minn.

Soy beans: Effect of time of harvesting upon yield and quality of hay and upon yield of wheat following. Comparison of varieties for hay at varied rates of planting. Ohio.

Influence of liming and inoculation on growth and composition of several varieties of soy beans. Ill.

Inoculation studies with soy beans. Iowa.

Effect of inoculation of soy bean seed on nitrogen content of plants. Wis.

Inoculation experiments with soy beans. (Columbia Substation) Tenn.

The continuous growing of soy beans with and without lime. N.J.

Investigation of the soy bean in its relation to crop succession. Ill.

Should soy beans be put into the silo or cured and fed as hay? Ohio.

FIELD CROPS--Soy Beans. (Cont.)

Soy beans.--To secure further data concerning the relative worth of different soy bean oilmeals. Ohio.

Soy beans.--To determine the effect of their oil content on the feeding value of soy beans. Ohio.

Comparison of soy beans and cowpeas for hay and seed production. Mo.

Comparison of alfalfa, sweet clover, cowpeas and soy beans as hay crops. (Charlotte Court House Substation) Va.

Place soy beans could occupy in the farm rotation. Md.

Companion cropping of corn and soy beans. Ill.

Growing corn and soy beans together. Ky.

Investigation of associated growth of soy beans and corn. Wis.

Soy bean studies. Composition and yields at different stages of growth. Iowa.

Soy bean harvesting and threshing studies. Ill.

Soy beans in the Gallatin Valley. Mont.

Soy bean production. Iowa.

Study of soy beans. Ark.

Sudan Grass.

The inheritance in root crosses between Sudan grass and Johnson grass.--To determine the mode of inheritance of the root systems in crosses between Johnson grass and Sudan grass. Ga. (A)

A study of the cultural requirements and adaptation of Sudan grass.--To determine the adaptation of Sudan grass and ascertain the most satisfactory cultural practices. Mo.

Cultural experiments with Sudan grass. Idaho.

Rate of seeding Sudan grass and cowpea mixture for hay. Ala.

Value of Sudan grass as forage crop for Wisconsin. Wis.

Sudan grass studies. Iowa.

Annual forage crops. Millets, Sudan grass and other sorghums. Ohio.

FIELD CROPS--Sudan Grass. (Cont.)

Annual forage crops - millet, sorghum, and sudan grass.--To test the relative forage yields of the annual grasses, millet, sorghum and Sudan grass. (Dickinson Substation) N.Dak.

Millet, sorghums and Sudan grass in the Judith Basin. Mont.

Millet, sorgos and Sudan grass in northern Montana. Mont.

Sugar Beets.

Sugar beet breeding. Mich.

Selection work with sugar beets to improve the sugar content. Me.

Seed production. Sugar beets: Selection and improvement of sugar beets for high sugar content by propagation of mother beets showing highest percentage of sugar. (Aberdeen Substation) Idaho.

Sugar beet variety test. Idaho.

Variety tests of sugar beets. (Northwest Substation, Crookston) Minn.

Variety tests of sugar beets. (Baton Rouge Substation) La.

Sugar beets. Varietal testing. Mich.

Fertilizer tests with sugar beets under irrigation. (Huntley Substation) Mont.

Sugar beet studies.--(a) To determine best date of spring planting and best date of fall planting. (b) To compare the furrow v. flooding method of irrigation, and (c) To compare effect on germination of irrigating before and after planting. N.Mex.

Sugar beets - cultural methods. Effect of date of planting on yield per acre. Mich.

Sugar beets-- cultural methods. Field storage. Mich.

The value and productivity of sugar beet seed produced annually instead of biennially. N.Mex. (A)

Treatment of sugar beet seed. Mich.

Sugar beets in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

FIELD CROPS--Sugar Cane.

Sugar cane breeding experiments.--To develop sugar cane varieties that are adapted to the dry weather conditions of St. Croix and that will ratoon well and yield a heavier tonnage of sugar than do the locally grown varieties, Crystalline and Rib on. Virgin Islands.

Selective cane breeding.--To develop improved strains of the standard varieties of sugar cane with reference to high yield of cane, high sucrose content, and resistance to drought, disease and insects. Virgin Islands.

Cane breeding from seed. The production of improved varieties of sugar cane, particularly with respect to disease resistance. Porto Rico.

To secure a variety that will give a more profitable yield of sugar per acre. (Sugar Substation, New Orleans) La.

Variety test of sugar cane.--To determine the variety or varieties of sugar cane that will produce the highest yield of sugar under St. Croix conditions. Virgin Islands.

Test of sugar cane seedling S.C. 12/4.--To determine the relative values of S. C. 12/4 cane and Crystallina cane for planting in St. Croix. Virgin Islands.

Determination of the effect of various soil amendments and fertilizers on growth of sugar cane in the Everglades. Fla.

Determination of the effect of varying amounts and varying sources of potash on sugar content and growth of sugar cane. Fla.

Commercial nitrogen v. leguminous plants in cane growing.--To determine the comparative utility of nitrate of soda, sulphate of ammonia and leguminous manures as sources of nitrogen for cane fertilization. Porto Rico.

Sugar cane spacing test.--To determine the relative effects of close and distant planting of cane on the yield of harvested cane and the production of sugar. Virgin Islands.

A study of the relation between sucrose content in cane and its value for cuttings.--To determine the stage of development of cane as indicated by sucrose content in which it gives best results as plant tops and cane cuttings. Virgin Islands.

Study of coloring matter in sound cane, and plant pigments, and their effect upon the color of the products. La. (A)

FIELD CROPS--Sunflowers.

Sunflower breeding. Mont.

Breeding field corn and sunflowers. N.Y. Cornell.

Farm crop production investigations. Sunflower improvement. (Northeast Substation, Duluth) Minn.

Improvement of sunflowers for silage production by selection and breeding. Idaho.

Sunflower varieties in the Gallatin Valley. Mont.

Sunflower investigations, including a trial of types, selection for improvement, and rate of seeding. W. Va.

Sunflowers as silage.--A study of the relative value of varieties, thickness of stand within the row, distance between rows, date of planting and degree of maturity at which they are cut. Ill.

Cultural experiments with sunflowers. Idaho.

Method of seeding sunflowers. Mont.

Silage crop investigations. Rate and date of planting sunflowers. (Sandpoint Substation) Idaho.

Date of seeding sunflowers. Mont.

Sunflowers and corn. Rate and method of seeding. (Judith Basin Substation) Mont.

Sunflowers for silage, rates of seed, methods of planting, etc. (North Central Substation, Grand Rapids) Minn.

A comparison of distance apart to plant corn, corn and soy beans and sunflowers. Minn.

Rate of seeding sunflowers as related to yield of silage. (Aberdeen Substation) Idaho.

Silage crop investigation. Comparison of sunflowers and artichokes. (Sandpoint Substation) Idaho.

Corn v. sunflowers in northern Montana. Mont.

Studies of drought-enduring forage crops, e.g., sunflowers, millets and sorghums. S.Dak.

Effect of sunflowers upon yield of succeeding crops. (Huntley and Judith Basin Substations) Mont.

FIELD CROPS--Sweet Clover. (See Clover, Sweet.)

Sweet Potatoes.

Sweet potato breeding work.--To develop a sweet potato variety of good quality and greater prolificacy than the varieties commonly grown in the Virgin Islands. Virgin Islands.

Breeding experiments with the sweet potato.--To determine the influence of the heavy yielding character of the individual plant upon the yielding character of its progeny. Virgin Islands.

Sweet potato seed selection.--To determine the relative value of seed stock from high yielding and low yielding hills (disease free stock only to be used) as regards: (a) Productivity, (b) uniformity of potatoes as to size, type, etc.--To determine the relative value of vine cuttings as compared with slips for maintaining yield and type, commencing from same hill.--To determine the comparative value of large and small potatoes for seed. N.C.

Sweet potatoes.- Progeny of single potato.--To determine whether and to what extent improvement as to yield and type can be effected by selection within a given strain. (Willard and Coastal Plain Substations) N.C.

Sweet potato variety tests. Ala.

Sweet potatoes - variety studies. Ky. Miss.

Sweet potato variety testing.--To determine productivity, market values, keeping qualities, earliness, and quality of all varieties. (Willard and Coastal Plain Substations) N.C.

Varieties of sweet potatoes best suited to the State. Okla.

Sweet potato variety test.--To determine which imported and local varieties are best adapted to local conditions. Guam.

To learn best varieties and cultural methods for yautias, dasheens, and sweet potatoes for Porto Rico. Porto Rico.

Sweet potatoes. Variety, fertilizer, culture, harvesting and curing tests. (Holly Springs Substation) Miss.

Sweet potato cultural practices.--To determine the comparative value of slips v. vine cuttings as regards productivity; the effect of ridging on productivity and type of potatoes; the effect of vine cuttings on yield. (Willard and Coastal Plain Substations) N.C.

Sweet potatoes. A study of the effects of vine pruning and distance of planting upon size, yield, and quality of tubers. Ariz.

FIELD CROPS--Sweet Potatoes. (Cont.)

Fertilization of sweet potatoes. Ga.

A study of fertilizers for sweet potatoes. Best nitrogen and potash carriers. Md.

Plant food studies with sweet potatoes. N.J.

Lime influence on sweet potatoes. (Salisbury and Cheltenham Substations) Md.

The relation of sulphur, sulphur-phosphate mixtures, fertilizers, manure, lime and varieties to yield and disease control of sweet potatoes. N.J.

Sweet potato fertilizer test.--To determine what fertilizer or combination of fertilizers is best suited for growing sweet potatoes under Guam conditions. Guam.

Sweet potato fertilizer test.--To determine the influence of stable manure on the yield of sweet potatoes. Virgin Islands.

Rotation and fertilizer experiments with corn, sweet potatoes, peanuts and Napier grass, to determine the production of corn, sweet potatoes and peanuts in rotation, using various forms of commercial fertilizers and lime, and also the best method of fertilizing Napier grass. Fla.

Sweet potato. Comparison of seed from late vine cuttings with seed from main crop draws, as regards productivity, type, and keeping quality. (Willard and Coastal Plain Substations) N.C.

A study of conditions influencing the blossoming and seeding habit of sweet potatoes.--To induce the sweet potato to flower and form seed that can be used to produce new varieties. (a) Special (b) Observational. (Willard and Coastal Plain Substations) N.C.

Observations on the variations of sweet potato seedlings.--To obtain data on the variations of sweet potato seedlings where two or more seedlings are grown from a single pericarp under natural conditions of pollination. Virgin Islands.

Germination tests of sweet potato seed.--To determine the effect of scarification upon the length of time between planting and germination of sweet potato seed and the percentage of germination. Virgin Islands.

Effect of variation in local day length on beans and sweet potatoes.--To learn the importance of variation in day length and consequently of planting season on economic crops in the tropics. Porto Rico.

A study of the factors involved in the production, curing and shipping of sweet potatoes. Ark.

FIELD CROPS--Sweet Potatoes. (Cont.)

Sweet potato storage.--To determine the best keeping varieties of sweet potatoes and the amount of shrinkage in varieties in storage.--To collect notes and information on storing, curing, and operating a storage house.--To study the relation of temperature, time of harvest, maturity and frost to the keeping quality of sweet potatoes. (Willard and Coastal Plains Substations) N.C.

Nature of the physiological changes in stored sweet potatoes. Ala. (A)

Sweet potato storage and freezing test. Miss.

Experiments with sweet potatoes, eggplants, peppers and cantaloupes. (Ridgely Substation) Md.

Sweet potato investigations. S.C.

Timothy.

Breeding timothy. N.Y. Cornell.

Timothy selection.--To secure a superior strain particularly suited to New Hampshire. N.H.

Timothy improvement. Pa.

The production of high-yielding, rust-resistant timothy. Minn.

Test of timothy strains produced by U.S.D.A. timothy breeding station at Eyria, Ohio. Ohio.

Timothy strain tests for the U.S.D.A. R.I.

Timothy variety test. (Sandpoint Substation) Idaho.

Effect of fall v. spring seeding of timothy upon yield of wheat. Ohio.

Tobacco.

Tobacco breeding. Ohio.

Selection and cross breeding of tobacco. Wis.

Maryland export tobacco investigations.--To improve by breeding and selection, to determine the best fertilizers, best systems of crop rotation, methods of growing, curing and handling and control of important diseases. Md.

FIELD CROPS--Tobacco. (Cont.)

Sterility of hybrids of Nicotiana. Pa.

Methods of improving the naturally self-pollinated tobacco plant. Conn.
State. (A)

Variety tests with tobacco. (Appomattox, Bowling Green, Chatham, and
Charlotte Court House Substations) Va.

Varietal trials of tobacco. (Clarksville Substation) Tenn.

Tobacco variety tests. Ky.

Variety test of cigar filler tobacco. Pa.

To study the different varieties of tobacco with respect to yield and
commercial quality. (Oxford and Reidsville Substations) N.C.

Spacing experiments with tobacco. (Clarksville Substation) Tenn.

Spacing in connection with variety trials of Burley tobacco. Tenn.

Fertilizer tests with tobacco. Ky.

Fertilizer experiments with dark tobacco and crops grown in rotation
with it. (Appomattox and Charlotte Court House Substations) Va.

Fertilizer experiments with shade-grown tobacco. (Tobacco Substation)
Fla.

Fertilizer tests.--To determine the correct amount, right proportions
and most efficient carriers of plant food materials for tobacco in
rotation. (Oxford and Reidsville Substations, N.C.)

Fertilizer tests with bright tobacco and crops grown in rotation with
it. (Chatham Substation) Va.

Fertilizer experiments with sun cured tobacco and other crops grown in
rotation with it. (Bowling Green Substation) Va.

Fertilizer and liming experiments with tobacco, including the effect
and value of magnesium salts. (Clarksville Substation) Tenn.

Sources of ammonia used in tobacco fertilizers. (Chatham Substation)
Va.

Determination of the effect of various carriers of phosphoric acid on
the growth and quality of shade tobacco. Fla.

Determination of the effect of various carriers of potash on growth
and quality of shade tobacco. Fla.

FIELD CROPS--Tobacco. (Cont.)

Special potash experiments with tobacco.--To note effect of the addition of different kinds and amounts of potash for tobacco. (Oxford and Reidsville Substations) N.C.

Determination of the need for manure in growing shade tobacco. Fla.

Effect of liberal humus supply on bright tobacco.--To study effect of humus on quality of tobacco. (Oxford and Reidsville Substations) N.C.

Effect of various crops, both when turned under and when removed, on tobacco immediately following. (Clarksville Substation) Tenn.

Closer planting combined with more intensive fertilizing.--To study effect on yield and quality of tobacco by planting at different thicknesses and fertilizing more heavily. (Oxford and Reidsville Substations) N.C.

Fermentation of tobacco. Ohio.

Tobacco curing experiments. Ky.

Tobacco seed production. Md.

Rotation experiments with tobacco. Ky.

Types of rotations with and without tobacco. (Appomattox Substation) Va.

Study of the effect on quality and yield of tobacco after other crops and maintaining the humus supply of the soil. (Oxford and Reidsville Substations) N.C.

Permanent tobacco seed bed. The practicability of maintaining the seed bed in the same place. (Oxford and Reidsville Substations) N.C.

Tobacco cropping system investigations. Mass.

Cooperative tobacco investigations. W. Va.

Growing tobacco of high nicotin content for use as an insecticide. N.I. State.

Crop relations, comparative effect of tobacco and other crops on yields of succeeding crops. Md.

Effect of leaving tops on plants on the quality of cigarette tobacco.--To determine whether a milder and more desirable cigarette can be produced by leaving the plants untopped as is done with Turkish tobacco. (Oxford and Reidsville Substations) N.C.

Relation of chemical characters to quality in leaf tobacco. Ky.

Tobacco experiment. Pa.

FIELD CROPS--Turnips.

Variety tests of stock turnips. (Northwest Substation, Crookston) Minn.

Variety Tests, General.

Crop variety test. Tex.

Variety tests of farm crops. Ga.

Tests of species and varieties of farm crops. N.J.

Cooperative variety trials of farm crops. (Duluth and Waseca Substations) Minn.

Variety tests of common field crops. (Raymond Substation) Miss.

Varietal tests of farm crops. Minn.

A study of varietal adaptations and fertilizer requirements on Red River Valley soils. Tests of varieties of farm crops. (Northwest Substation, Crookston) Minn.

Testing varieties of farm crops.--To determine the relative merits of all the more or less promising varieties of farm crops that can be found, and which may be of interest to Indiana agriculture. Ind.

Testing of crop varieties adapted to the upper peninsula and the development of new varieties especially adapted to this region. (Upper Peninsula Substation) Mich.

Variety studies of field crops suited to Coastal Plains soils. (South Mississippi Substation at Poplarville) Miss.

Variety studies for field crops for the Delta. Miss.

Field crop investigations under both dry farming and irrigation. Varietal trials with wheat, oats, barley, rye, field peas, corn, alfalfa, sunflowers, grasses, potatoes, and other minor crops. (Burns Substation) Oreg.

Cooperative crop experiments. Varietal and cultural tests with most of the important crops, obtaining data for particular conditions and localities. Ariz.

Velvet Beans.

Velvet bean variety tests. Ala.

Variety tests with velvet beans. S.C.

A chemical study of the velvet bean.--To determine in what respect the velvet bean is deficient in nutritive properties or is otherwise injurious. Ala. (A)

A biological study of the nutritive value of the velvet bean. With special reference to its amino acid deficiencies and its content of fat-soluble vitamin, water-soluble vitamins and mineral. Ark. (A)

FIELD CROPS--Vetch.

Vetch variety tests. Ala. (Sandpoint Substation) Idaho.

Tests of species and varieties of vetches.--To learn the comparative value of the various species for forage, soil improvement and seed production. (Fairbanks and Matanuska Substations) Alaska.

Vetch varieties.--A comparison of new vetches with the older standard varieties. N. C.

Testing vetches for yields of hay. Va.

Forage crops investigations. Varietal trials with vetches for forage and seed. Oreg.

Forage crops investigations. Nursery trials with vetches and related plants, new vetch varieties and horse bean varieties. Oreg.

Forage crops investigations. Cultural trials with vetches and related plants and with horse beans. Oreg.

Forage crops investigations. Succession of crops or rotation trials with vetches and other forage crops. Oreg.

Vetches and melilotus, with and without oats, for hay. Ala.

Value of vetch sown in winter rye on sandy soils. (Spooner Substation) Wis.

A study of the hard seed in vetch and other legumes. N.Y. Cornell.

Wheat.

Genetics and Breeding.

Mendelian studies with wheat and oats. N.Y. Cornell.

Genetics in wheat.--To obtain data as to quantitative amount of transgressiveness in earliness, height and size of kernel in Koto-Marquis crosses in comparison with the parents. N. Dak.

Inheritance of stem rust resistance of wheat. N. Dak. (A)

Wheat breeding. Ind. Mich. Tex.

Breeding wheat. N.Y. Cornell.

Breeding work with wheat. Ky. S.C.

Plant breeding--wheat. Okla.

FORAGE CROPS--Wheat. Genetics and Breeding. (Cont.)

Wheat breeding investigations. Iowa..

Wheat breeding in the Gallatin Valley. Mont.

Wheat breeding.--To develop, if possible, both spring and winter varieties which shall be suited to the Alaska climate. Alaska.

Wheat- Practical wheat breeding. The production of a wheat variety combining the stem rust resistance (and baking qualities) of Kota with certain desirable characters of other varieties such as strength of straw and lack of awns of Marquis. N.Dak.

Cooperative wheat breeding and winter hardiness nursery. Mont.

Breeding with oats and wheat. (Aroostook Farm Substation) Me.

Cereals: Breeding and selection of pure strains of wheat, barley, oats and rye. (Union Substation) Oreg.

Breeding experiments with wheat, oats, corn and sorghums. Kans.

Wheat breeding at Madison Station; wheat breeding in northern Wisconsin; variety tests of winter wheat and spring wheat. Wis.

Wheat breeding investigations, including the improvement of commercial varieties by the pure line method of breeding and hybridization and subsequent selection.--To improve quality and increase yield of winter wheat for Missouri. Mo.

Cereal breeding investigations, primarily with wheat, to develop high-yielding and disease-resistant varieties. (Moro Substation) Oreg.

Breeding wheats resistant to bunt. Calif.

The development of rust resistant varieties of wheat. Minn. (A)

Wheat improvement. Idaho. Pa.

Plant-to-row selection of wheat. S.C.

Small grain breeding.--Pure line selections with wheat and Abruzzi rye. N.C.

Improvement of winter wheat through breeding and selection. (North Platte Substation) Nebr.

Varietal improvement with wheat.--To improve existing varieties by selection and by crossing to produce new strains superior to those now grown. (Dickinson Substation) N.Dak.

FORAGE CROPS--Wheat. Genetics and Breeding. (Cont.)

Wheat: Pure line selection and hybridization as methods of improvement of wheat. Ohio.

Wheat: Studies of pure lines in wheat of the Kubanka and Kota varieties.-- To obtain an improved strain (pure line) or mixture of such as an improvement over the parent bulk variety and to obtain data upon the amount of correlation and variation which may exist among the various pure lines of a variety. N.Dak.

Breeding to increase the gluten content of California bread wheat. Calif.

To produce improved varieties of spring wheat. Minn.

To produce winter wheats of high yielding ability and which likewise contain other desirable agronomic characters. Minn.

Wheat: work in winter wheat.--To test hardiest strains of winter wheat and by breeding these to develop new strains sufficiently hardy for North Dakota conditions. N.Dak.

The culture and improvement of small grains, including wheat, oats, barley, rye, etc. Ariz.

Variety Tests.

Wheat variety tests. Ala. S.C.

Varietal trials of wheat. Del.

Variety tests of wheat. Ky.

Variety tests with wheat. (Appomattox, Bowling Green, Chatham, Lightfoot, Martinsville, Staunton, and Charlotte Court House Substations) Va.

Variety tests of wheat.--To determine the yields of different varieties of wheat as shown by competitive tests. Okla.

Variety tests of wheat, spring and winter. (North Central Substation, Grand Rapids) Minn.

Variety tests of spring wheat.--To learn which are the best varieties for general planting. (Fairbanks, Matanuska and Rampart Substations) Alaska.

Variety trials of grain.--To try out varieties of wheat, barley and corn for yield, quality and hardiness. (Imperial Valley) Calif.

Variety tests with corn, wheat and soy beans. (Ridgely Substation) Md.

FORAGE CROPS--Wheat. Variety Tests. (Cont.)

Variety trials with wheat, oats and barley.--Determination of the best varieties under local soil and climatic conditions. (Kearney Park Substation) Calif.

Varietal experiments with winter wheat and barley, spring wheat, barley, oats and field peas. (Sandpoint Substation) Idaho.

Small grain investigations. Variety tests with wheat, oats and barley. (Aberdeen and Sandpoint Substations) Idaho.

Small grain variety tests.--Testing of standard varieties of wheat, oats, rye and barley. (Statesville Substation) N.C.

Cereals: Varietal trials with barley, wheat, oats, peas, flax and rye. (Union Substation) Oreg.

Varietal trials, including wheat, barley, oats, field peas, corn and potatoes. (Moro and Hood River Substations) Oreg.

Cereal investigations. Varietal trials of winter and spring grains, including wheat, oats and barley. Oreg.

Variety test and rate of seeding winter rye and winter wheat. (North Central Substation, Grand Rapids) Minn.

A study of the varieties of wheat with a view to their improvement. Pa.

Wheat variety tests and improvement by selection and breeding. Md.

Wheat: Variety testing and head selection for early maturity. Wyo.

Spring wheat varieties in the Gallatin Valley. Mont.

Spring wheat varieties in northern Montana. Mont.

Spring wheat varieties in the Judith Basin. Mont.

Winter wheat varieties in the Gallatin Valley. Mont.

Winter wheat varieties in the Judith Basin. Mont.

Winter wheat in the Judith Basin crop rotation. Mont.

Spring wheat varieties on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Winter wheat varieties on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

FORAGE CROPS--Wheat. Variety Tests. (Cont.)

Small grain investigations. Variety tests with wheat, oats, barley and miscellaneous grains under high altitude conditions. (High Altitude Substation) Idaho.

Varietal experiments with wheat.--To determine what varieties are best adapted to this region, including spring and winter wheat. (Dickinson Substation) N.Dak..

Cereal investigations. Nursery trials with wheat and rye selections and wheat-rye hybrids. Oreg.

Tests of new selections of wheat. (Ridgely Substation) Md.

Testing of rust-resistant wheat. (Archer) Wyo.

Wheat: Varieties, pure line selections and cultural work. Ohio.

Cereal investigations. Wheat: Variety tests and cultural experiments. Va.

Wheat investigations. Variety tests - Selection - Rate and date of seeding. W.Va.

Variety testing, breeding, acclimatization and cultural studies of small grains.--To improve the quality and yield of small grains, including winter wheat, oats, spring wheat, rye, winter barley and winter emmer. Nebr.

Cereal variety tests.--To test new and standard varieties of spring wheat, oats, barley and winter rye, as to yielding capacity, resistance to disease and trade value as measured by milling and baking tests. N.Dak.

A study of the performance of different varieties of spring wheat, barley, and emmer and their adaptation to northern and central Illinois conditions. Ill.

A study of the performance of different varieties of winter wheat and of their adaptation to northern, central and southern Illinois conditions. Ill.

Variety trials and cultural requirements with small grains.--Wheat, oats and barley in rows to determine the relative value of varieties of cereals for California conditions, especially with regard to yield. (Davis) Calif.

Cultural Experiments.

Wheat production: cultural methods. Ark.

Fallow and cultural tests with wheat. (High Altitude Substation) Idaho.

Harrowing winter and spring wheat in the Judith Basin. Mont.

Comparison of effect of fall plowing, spring plowing, and no plowing on corn, potatoes and wheat. (Northwest Substation, Crookston) Minn.

FORAGE CROPS--Wheat. Cultural Experiments. (Cont.)

- Tillage investigations. Wheat seed bed preparation. Kans.
- Rates of seeding spring wheat. (Northwest Substation, Crookston) Minn.
- Rate and date of seeding Marquis, Kota and Nodak wheat.--To determine the effect of different rates and dates of seeding on the relative yield of standard varieties of wheat. (Dickinson Substation) N.Dak.
- Rate and date of planting winter wheat. (Sandpoint Substation) Idaho.
- Date and rate of seeding winter wheat on non-irrigated bench lands. Mont.
- Rate and date of seeding oats, wheat, barley, and rye. Minn.
- Small grain culture work.--To study dates and rates of seeding wheat and oats at the Piedmont Substation, N.C.
- Date-of-planting experiments with wheat, oats, and barley; also cotton and corn. (Jackson Substation) Tenn.
- Rate, date, and depth of seeding winter wheat on dry land. (High Altitude Substation) Idaho.
- Methods of seeding winter wheat; in corn, fall plowing, and grain stubble. (Northwest Substation, Crookston) Minn.
- Experiments with the furrow method of seeding winter wheat. (Colby Substation) Kans.
- Test of furrow method of seeding wheat; grain varietal tests; cultivation tests of corn; etc. Kans.
- Straw mulching of winter wheat in the Judith Basin. Mont.

Fertilizer Tests.

- Fertilizer experiment with wheat. (Martinsville and Staunton Substations) Va.
- The effect of various combinations of fertilizer elements upon the quality of wheat and corn. Del.
- Triangular fertilizer experiments with cotton, corn, and wheat, followed by cowpeas, grown in rotation. Ga.
- Use of nitrate of soda on wheat, fall and spring applications. Ky.
- The relation of potatoes and nitrates to wheat yields. Ohio. (L)

FORAGE CROPS--Wheat. Fertilizer Tests. (Cont.)

Wheat.--To study the validity of the alleged high yield of wheat when following potatoes and to offer a suggestion for the behavior of wheat when grown after this crop. Ohio.

Chemical Studies.

Composition and quality of Montana wheats. Mont.

The effect of available nitrogen upon the protein content and yield of wheat. Idaho. (A)

The study and development of methods for measuring quality in wheat by physical and chemical examination. N.Dak. (A)

Tests of quality of strains of wheat from the plant breeding section. Minn.

Milling and Baking.

An investigation of the milling quality of wheat.--To determine the comparative value of wheats of different varieties and physical types and their adaptation for the manufacture of various kinds of food products; the influence of cultural methods on wheat quality and of various methods of handling wheat on the prevalence of damage, and various kinds of damaged wheat with reference to keeping quality and suitability for use as food. W.Dak. (A)

Studies of the chemical aspects of certain milling processes. Chemical and milling tests on wheat produced in various agronomic experiments and comparative chemical and milling behavior of Kanred and other winter wheat varieties. Kans.

Milling, baking and macaroni experiments.--To determine the value of wheat varieties from a milling and baking standpoint, and to test the comparative value of durum varieties for macaroni purposes. (Dickinson Substation) W.Dak.

Factors controlling milling and baking qualities. Comparative study of durum, Poulard and bread wheats. Ariz. (A)

Durum wheat investigations.--To determine the value of different types of durum wheat for use in manufacture of food products. W.Dak.

Glutin content of wheat varieties. S.Dak.

Diastatic activity in wheat flour. W.Dak.

Influence of climate upon baking quality of hard wheats. Mont.

The effect of variety, soil, climatic conditions, and disease upon the milling and bread value and chemical composition of wheat. W.Dak. (A)

FORAGE CROPS--Wheat, Milling and Baking. (Cont.)

Effect of storage on milling and baking quality and chemical composition of wheat. W.Dak. (A)

The strength of wheat flour-- colloidal and other factors which may be involved in flour strength. Minn. (A)

The biochemical changes in frosted wheat and their effects on the bread-making quality and market value. Mont. (A)

A study of the bread-making qualities of Colorado flours. Colo.

Michigan wheats and flours. Mich.

Investigation of the baking qualities of Missouri flour. Mo.

The relation of certain chemical and physical-chemical characteristics of Nebraska wheat to its milling and baking quality. Nebr. (A)

A study of the value of present methods of examining wheat samples. N.Dak.

Miscellaneous.

Studies of environment and wheat yields. Md.

Correlation of meteorological factors with wheat yields. Md.

Spring wheat in the Judith Basin crop rotation. Mont.

Spring wheat in northern Montana crop rotations. Mont.

Spring wheat on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Winter wheat in northern Montana crop rotations. Mont.

Winter wheat on dry land in the Yellowstone Valley. (Huntley Substation) Mont.

Continuous culture of wheat.--To determine the difference as observed in yields between continuous culture and crop rotation with special reference to the leading crops of Oklahoma and under Oklahoma conditions, wheat being the index crop. Okla.

Continuous cropping plats of oats, barley, and wheat. Two tons manure each year per acre. (West Central Substation, Morris) Minn.

Laboratory studies on the differences in wheat yields in the crop rotation experiments, after corn, soy beans, and tobacco. Ky.

Wheat in irrigated rotations in the Yellowstone Valley. (Huntley Substation) Mont.

FORAGE CROPS--Wheat. Miscellaneous. (Cont.)

Flax and wheat mixed cropping. N. Dak.

Flax-wheat mixture experiment.--To determine whether flax and wheat sown together will return a greater profit than either crop sown alone. (Dickinson Substation) N. Dak.

Flax combinations with wheat and oats at different rates. (Northwest Substation, Crookston) Minn.

The continuous growing of wheat and rye with and without a legume green manure crop and without commercial nitrogenous fertilizer. N.J.

Flax - spring wheat mixtures under irrigation. Mont.

Flax - spring wheat mixtures in the Judith Basin. Mont.

Effect of fall v. spring seeding of timothy upon yield of wheat. Ohio.

Winter wheat nursery: Kansas white winter wheats under irrigation. (Burns Substation) Oreg.

Wheat storage and shrinkage investigations, involving the physical conditions of grain storage. Kans.

Wheat production and storage investigations. Iowa.

Grain dockage investigations. Examination and mechanical analyses of wheat and screenings. Minn.

Dormancy studies with winter wheat. Mont. (A)

Uniform winter hardiness test (wheat). (Judith Basin Substation) Mont.

A study of the value of the pressed juice method as a means of determining hardiness in hybrid families of wheat. Minn.

Seed treatment of wheat for control of disease. Ky.

Hot water treatment of wheat. Ky.

Wheat rust nursery.--To determine the rust resistance of different varieties and strains of wheat and oats and whether or not rusts in different sections of the continent differ. (Langdon Substation) N. Dak.

The resistance of wheat varieties to bunt. Minn.

The resistance of wheat varieties to wheat scab. Minn.

Studies of varietal resistance of wheat, barley, rye, and oats to root and culm rots. Minn.

FORAGE CROPS--Wheat, Miscellaneous. (Cont.)

Yellow berry in Montana wheats. Mont.

Yellow berry in wheat. The cause of yellow berry in Turkey Red wheat in the Columbia Basin, and means for its control. Oreg.

Effect of stage of maturity at harvest upon the germination power of wheat, oats, and barley seed. Wyo.

Effect of date of harvest upon germination of wheat. Mont.

Wheat: Effect upon subsequent development of clipping the spring growth. Ohio.

The effect of straw mulch to wheat upon the yield of wheat and the following clover. Ohio.

Wheat. The effect of beards upon yield of wheat. N.Dak.

Sterile spikelets in wheat. Del. (A)

Cereal investigations. Multiplication and comparison trials of winter wheat selections. Oreg.

Growing multiplication plat of Mammoth Red wheat for distribution. (Ridgely Substation) Md.

Wheat marketing investigations. Studies of farm storage credit and quality factors in the marketing of wheat. Kans.

HORTICULTURE.

Almonds.

Almond breeding. (Davis Substation) Calif.

Pollination studies. A study of the pollination requirements of the various deciduous fruits, including a study of the factors causing sterilization in such fruits as the almond and cherry. (Davis Substation) Calif.

Irrigation of an old almond orchard for the purpose of rejuvenating the trees. (Davis Substation) Calif.

Pecan, English walnut, and almond experiment (a) to ascertain whether New Mexico climatic and soil conditions are suitable for the growing of these nut trees; (b) to study the different methods of preventing winter injury to the trees; and (c) an investigation on originating, if possible, a late blooming almond. N.Mex.

HORTICULTURE--Apples.

Genetics and Breeding.

Apple breeding investigations. Idaho. (A) Oreg.

Fruit breeding. Especially apples and strawberries. Mebr.

Apple breeding. (a) Bud selection, (b) growing apple seedlings from seeds of fruits and trees chosen as possessing special merit, and (c) crossing and hybridizing of apples. Ill. (A)

Apple breeding. Study of heredity in the apple, the unit characters or groups of characters which follow Mendel's law, and the application of the principles of breeding in development of desirable winter varieties. Iowa. (A)

Breeding apples for late blooming habit. Mo.

Breeding late blooming varieties of apples. Va.

Pollination and fertilization studies with apples. S.C.

Pollination experiments with Yellow Newtown and Yellow Bellflower apples in the Pajaro Valley.--To determine the amount of self sterility and intersterility among the different varieties of apples in the Sebastopol section. Calif.

Pollination.--To determine how and to what extent standard varieties of apples and plums are self-barren and also to determine which of the standard varieties may best be used as pollinizers for self-barren and partially self-barren varieties. (South Haven Substation) Mich.

Pollination of the apple. Studies of the causes leading to the reported self-sterility of some varieties and of the possible benefits derived from cross-pollination. W.Va. (A)

A study of the causes of cross and self sterility in the apple, through a cytological and genetic study, and of the sterility and compatibility relationships of different varieties through pollination experiments. Me. (A)

Variety Tests.

Apples: Variety test. (Auburn and Talledega Substations) Ala. Miss.

Apple variety tests. To ascertain if apples can be grown. (Sitka Substation) Alaska.

HORTICULTURE--Apples. Variety Tests. (Cont.)

Varietal studies of apples. Del.

Variety tests with apples. S.C.

Variety orchard of apples and miscellaneous tree fruits. Ky.

Apple orchard experiment with varieties. Pa.

Apples: Variety studies, including field observations and orchard tests to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

Test of a number of new varieties of apples and of the one- and two-year-old apple graft. (a) The testing of twenty new varieties of apples such as the Delicious, King David, Champion, Apple of Commerce, Stayman Winesap, etc. (b) To secure data on the longevity of these varieties upon very sandy soil. (c) To ascertain whether the one-year-old or two-year-old apple graft is the better for planting under Southern New Mexico conditions. N.Mex.

New apples for Wisconsin. Wis.

Varieties of apples best adapted to Wisconsin conditions. Wis.

Variety test of apples and crabs.--To determine the most hardy and best adapted varieties of apples and crabs for the area. (Dickinson Substation) N.Dak.

Variety tests of apples, peaches, pears, plums, and cherries. Md.

Summer apples.--To test the commercial production of early apples in eastern North Carolina.--To determine the most profitable varieties of summer apples. (Willard Substation) N.C.

Horticultural investigations. The introduction and testing of apples, pears, and plums to determine their winter hardiness and adaptability to high altitudes. (High Altitude Substation) Idaho.

Apple orcharding trials; comparative varietal studies; and storage endurance. Long-time studies of a 40-variety apple orchard as to growth, yields, winter injuries, storage endurance, etc. Vt.

A study of the strains of the Baldwin apple. N.Y. State.

Cultural Experiments.

Apple orchard experiment--cultural methods. Pa.

A comparison of cultural methods in the apple orchard. Pa.

HORTICULTURE--Apples. Cultural Experiments. (Cont.)

Comparison of cultivation and heavy mulching for apples and pears. Mass.

Soil treatment of apple orchards.--To compare the effect of cultivation, cultivation with cowpea cover crop, sod mulch, lawn grass and neglect, and the use of nitrogen and potash fertilizers in these systems of management. Ill.

Sod v. tillage for apple orchards. (Hancock and Colesville Substations) Md.

Orchard culture.--To determine the effect of certain cultural practices upon an apple orchard (Union Fruit Farm). Nebr.

Test of cover crops for apple orchards. Mass.

Apple orchard experiment with cover crops. Pa.

Fertilizer Tests.

Fertilizers for apples. N.Y. State.

Fertilizers for apples and peaches. W.Va.

The fertilization of apple orchards. (Salisbury, Hancock, Colesville, Mt. Airy, and Berlin Substations) Md.

Plant food studies with apples. N.J.

Apple orchard experiment with fertilizers. Pa.

Influence of fertilizer applications upon the yield, growth, and other physiological functions of the apple grown in different soils Pa. (A)

Apple fertilizer experiment.--To compare the effect of nitrogen fertilizer in different forms, alone and in combination with potassium and phosphorus fertilizers. (Hillview and Olney Substations) Ill.

The influence of nitrogen, potash, and phosphoric acid in apple production. Del.

An experiment to determine the relative value of sulphate of ammonia and nitrate of soda as fertilizers for apple trees standing in sod. Pa.

Fertilizer experiment (on Ben Davis apple orchard) to test the relative value of sulphate of ammonia, nitrate of soda, lime, phosphate, and potash in an apple orchard. Mich.

Local orchard experiments. Response of apple trees to fertilizers under different soil conditions. (Salem, Winchester, Crozet, Amherst, Appomattox, and Berryville Substations) Va.

HORTICULTURE--Apples. (Cont.)

Pruning.

Pruning and fertilizer experiment on bearing apples.--To compare the effects of pruning and no pruning, and of a nitrogen fertilizer, on bearing apple trees. Ill.

Apples: Pruning tests. Mass.

Pruning experiment on young apples and peaches.--To compare the California "long system" and the modified central leader types of pruning for the development of framework branches and to note the effect of a nitrogen fertilizer on the two systems of pruning. Ill.

Effects of pruning on growth, with apples, cherries, grapes, and gooseberries. N.Y. Cornell.

Experiments in pruning apples. Mass.

Apple pruning and training. (Graham Substation) Mich.

Pruning apples, pears, and small fruits. Nebr.

Physiological effect of pruning apple trees. W.Va. (A)

Some physiological responses of the apple tree to pruning.--To gain an accurate index of tree activity through physiological studies with a view of interpreting the results of pruning practices. Ind.

Kind of amount of pruning for apple trees in different conditions of vigor. (Salem, Winchester, Crozet, Amherst, Appomatox, and Berryville Substations) Va.

Studies on the pruning of old apple trees. N.Y. Cornell.

Apple pruning.--To determine the comparative value of different systems and different amounts of pruning with apple trees. (Swannanoa Substation) N.C.

Apple pruning experiment, including pruning to vase-shaped trees, to semi-leaders, to leaders and summer pruned. N.H.

Apple pruning experiment.--To compare the effects of no pruning, heading back, thinning and severe thinning on young apple trees. Ill.

Test of pruning methods on the Northern Spy and other varieties. Mass.

Spraying and Dusting.

Spraying of apple orchards. Iowa.

Experimental apple spraying.--To determine the comparative value of Bordeaux mixture, commercial lime sulphur, and sulphur dust in controlling apple scab and other diseases of the apple. Minn.

HORTICULTURE--Apples. Spraying and Dusting. (Cont.)

Dusting apple and peach trees for the control of insects and diseases. Md.

A comparison of spraying and dusting on apples and peaches, especially to try new dusts. Conn. State.

Effectiveness of dusting for the general treatment of apple orchards. N.Y. State.

Fruit Spur Studies.

Causes and means of control of fruit bud formation on the apple. W.H. (A)

Apple variety fruit spur study. Mass.

A study of fruit bud formation in the apple. Del. (A)

Factors influencing the functioning of apple fruit spurs, with reference to biennial fruiting. Wis.

The composition of bearing and non-bearing fruit spurs throughout the year. Md.

Stock and Scion Studies.

Orchard stocks for apples. Iowa.

Stocks for commercial varieties of apples. (Horticultural Substation) Mont.

Propagation of the apple, sweet cherry, and walnut by pretreatment of scion wood in place. Pa.

Interrelation of stock and scion in apples. Mass. (A)

Apple orchard experiment, selection, and stocks. Pa.

Miscellaneous.

Working out the anatomy and histology of the apple, Pyrus malus, with the idea of bringing together a complete account of this one plant which can be used as a reference in considering the structure of this and allied species. N.Y. Cornell.

Nutritive condition of apple tree tissue and regularity of fruiting. N.Y. Cornell.

A study of factors affecting the secondary development of flowers in the apple. Ohio.

Effect of pruning and nitrogen fertilizer upon the off-year production of Wealthy apple trees. Wis.

HORTICULTURE--Apples. Miscellaneous. (Cont.)

Studies on fruit spur and biennial bearing of apples. (Hancock Substation) Md.

Factors which influence the fertility and sterility of apple varieties, and the setting of fruit. Ark. (A)

Methods of propagating apples. N.Y. State.

Propagation of apples from selected buds. N.Y. State.

Propagation of apple trees on own roots. Mich. Md.

Influence of root grafts on scions of apples. Conn. State..

The growth and bearing habits of apple trees as influenced by bending and spreading the branches. N.Y. Cornell.

Thinning experiments with apples. (Hood River Substation) Oreg.

Apple thinning.--To determine the value of apple thinning as to the size of the fruit and the value on fruit bud formation. (Swannanoa and Statesville Substations) N.C.

Influence of cultural methods and conditions of growth on the keeping qualities of apples. Pa.

Time of picking in relation to tonnage and quality. Oreg.

Humidity in relation to loss of weight and volume. Oreg.

Measurable characteristics of maturing and ripening apples. Wash. (A)

Application of pressure test for maturity of apples. Oreg.

Cold storage for Iowa - Apples. Iowa.

The keeping qualities of apples in cold storage as affected by the health and vigor of the trees. A study of the conditions which favor and oppose the internal browning of the Yellow Newtown when grown under Pajaro Valley conditions. Calif.

Polishing in relation to keeping quality. Oreg.

Apple storage experiment.--To determine the effects of different materials used as wrappers in preventing the disease known as scald on apples in cold storage. Ill.

HORTICULTURE--Apples. Miscellaneous. (Cont.)

A study of the nature, causes, and prevention of winter injury to fruits, with special reference to the apple, including the root system. N.H. (A)

Determination of the hardness of the apple. Iowa.

Relation of orchard practices to winter injury of apple trees. N.Y. State.

Morus and its relations to the physiological activities of the apple.--To study different methods of handling orchard soils as shown by the effect on yield of fruit and longevity of trees. Iowa. (A)

Factors that influence the nutrient and water supply of apples, and their relation to the occurrence of stippen. N.Y. Cornell.

Effect of disbudding on apple trees. N.H.

Age of apple trees for planting. N.Y. State.

One- and two-year-old tree test.--To determine which is the best for planting in Oklahoma, one- or two-year-old apple trees. Okla.

Apple orchard survey, including studies with reference to diversity of crops. (Hood River Substation) Oreg.

Rate of growth of fruits of the apple. N.J.

Apple experiments at the demonstration orchard at Lincoln Institute. Ky.

Commercial value of dwarf apple trees. Va.

Effects of dusts in causing premature dropping of apples. N.Y. State.

Germination and storage of the apple seed. Iowa.

Apricots.

A study of the influence of early and late summer pruning and severity of cutting in dormant season upon the growth and yield of apricot trees. Calif.

Asparagus.

Breeding and selection for high yield and superior quality. (Davis Substation) Calif.

Asparagus investigations. (a) Asparagus crown selection studies at time of planting. (Davis Substation) Calif.

HORTICULTURE---Asparagus. (Cont.)

Asparagus variety and strain tests and classification studies. (Davis Substation) Calif.

Fertilizer experiment with asparagus. N.Y. Cornell.

Plant food studies with asparagus. N.J.

The specific effect of common salt on asparagus. R.I.

Plant spacing studies in the production of green asparagus. (Davis Substation) Calif.

Influence of various cutting practices upon yield, life of the bed, growth of the crown, and quality of asparagus shoots. (Davis Substation) Calif.

Influence of various physical and chemical treatments upon the germination of asparagus seed. (Davis Substation) Calif.

Study of the conditions affecting the production and vegetative propagation of Washington asparagus. (Market Garden Substation) Mass.

Root crown development in common asparagus (Asparagus officinalis). Davis Substation) Calif.

Sexuality in common asparagus (Asparagus officinalis). (Davis Substation) Calif.

Comparison of pistillate with staminate asparagus plants as to quality and total production. (Davis Substation) Calif.

Beans.

A study of the manner of inheritance of the various economic characters in beans. Ariz. (A)

Bean breeding experiment.--To develop a prolific bearing pole lima with a white color, free from the objectionable blue-gray coat when cooked. Virgin Islands.

Bean breeding.--To determine the bean varieties best adapted to local conditions and to obtain improved strains or crosses from them. Porto Rico.

The breeding of varieties of beans resistant to the various diseases of the bean. N.Y. Cornell.

Breeding field and garden beans for disease resistance. N.Y. Cornell.

Improvement of beans grown for canning. Wis.

Comparison of seed strains of string beans. Oreg.

HORTICULTURE--Beans. (Cont.)

Garden and field bean and pea investigations. Variety tests. (Aberdeen Substation) Idaho.

Cause and prevention of sclerema and hardshell in beans. N.Y. State.

Field and garden pea and bean investigations. Seed bean investigations (Aberdeen Substation) Idaho.

Bean experiments. (Archer) Wyo.

Beans. N.Y. State.

Beets.

Comparison of seed strains of beets. Oreg.

Beets: fertilizer needs to supplement stable and green manures. R.I.

Effect of various green manure crops on beets. R.I.

Autumn-plowed mammoth clover, cowhorn turnips, soy beans, and spring-plowed mammoth clover, rye, timothy, for early lettuce and beets. R.I.

Studies of the germination of beet seed. N.J.

Blackberries.

Blackberry culture:--To test the raising of blackberries and dewberries as a supplementary crop to the strawberry. (Hammond Substation) La.

Small fruit experiment. (a) To collect phenological data on a number of different varieties of strawberries, blackberries, raspberries, currants, and loganberries. (b) To ascertain, if possible, the best varieties of these different fruits for commercial and home plantations. N.Mex.

Blueberries.

Strain tests of blueberries for the U.S.D.A. R.I.

Blueberry tests.--Testing hybrid varieties originated in New Jersey. (Sitka Substation) Alaska.

Blueberry culture. Minn.

Blueberries. Miss.

Blueberry investigations. Mass.

HORTICULTURE--Broccoli.

Broccoli investigations. Comparative trials of 13 strains of broccoli as to earliness, yield, quality, and hardiness. Oreg.

Cabbage.

Mendelian studies with cabbage. N.Y. Cornell.

A study of the heredity of certain head characters in Volga cabbage. Del.

Breeding cabbage. N.Y. Cornell.

Breeding experiments with late cabbage. Pa.

Development of a yellows-resistant early cabbage.--To develop yellows-resistant strains of early variety of cabbage, viz, Copenhagen, Jersey Wakefield and Charleston Wakefield. Ind.

Selection of midseason "yellows" resistant strains of cabbage best suited to Maryland. Md.

Cabbage seed selection for disease resistance. Mo.

"Wilt resistant" cabbage in comparison with others. (Jackson Substation) Tenn.

Early cabbage: The relation of seed selection to earliness, yield, and uniformity of type. Pa.

Cabbage variety tests. (Swannanoa Substation) N.C.

The relative value of varieties of late cabbage for different purposes. Pa.

Cabbage: Relative value of the most extensively grown varieties of cotton. Pa.

Comparison of seed strains of late cabbage. Oreg.

Methods of growing seeds of especially adapted varieties of cabbage and cauliflower. Md.

Planting date of cabbage. (Swannanoa Substation) N.C.

Cabbage nutrition studies. Mich.

A study of the fertilizer requirement of cabbage and tomatoes. Pa.

Cabbage fertilizer experiments.--To determine the effect of commercial fertilizers and barnyard manures on yields, how frequently to irrigate for best yields, and to test different kinds of covering on cold frames in starting seedlings. N.Mex.

HORTICULTURE--Cabbage. (Cont.)

Fertilizer needs of cabbages to supplement stable and green manures. R.I.

A study of the root development of cabbage seedlings as influenced by culture and environment previous to the final transplanting. Pa.

Effect on cabbages of four preceding crops of the same year. R.I.

Yellows-resistant cabbage. Iowa.

Study of hardiness in New Jersey Wakefield, and Charleston Wakefield cabbage and possible bearing it may have on formation of seed shoots. Md.

Studies in cabbage seed disinfection. N.Y. Cornell.

Experiments in storing cabbage. Mont.

Cantaloupes.

Pollination influence on cantaloupes. Md.

Breeding and selection with cantaloupes. Md.

Requirements, varieties, cultural methods, and seed "place effect" of the watermelon and cantaloupe. Mo.

A study of the factors affecting fruiting habits of the cantaloupe.--To determine how conditions within the melon may be altered so that a higher ratio of pistillate to staminate blossoms may be produced, and that the pistillate blossoms may be produced earlier in the plant's life; also, conditions favorable for fruit setting. Calif.

Experiments with sweet potatoes, eggplants, cantaloupes, and peppers. (Ridgely Substation) Md.

Manures v. fertilizers for cantaloupes. Md.

A study of factors involved in the production and shipping of cantaloupes. Ark.

Carrots.

Comparison of seed strains of carrots. Greg.

Variety test of stock carrots. (Northwest Substation, Crookston) Minn.

Fertilizer needs of carrots to supplement stable and green manures. R.I.

Seed production. Production studies with carrot and parsnip seed growing. (Aberdeen Substation) Idaho.

HORTICULTURE--Cauliflower.

Comparison of seed strains of cauliflower. Oreg.

Conditions affecting heading of late crop of cauliflower in the southern sections of the State. (Bridgely and College Park Substations) Md.

Methods of growing seeds of especially adapted varieties of cabbage and cauliflower. Md.

Celery.

Breeding of horticultural plants, including tomatoes, small fruits, and celery. Utah.

Comparison of seed strains of celery. Oreg.

Fertilizer needs of celery to supplement stable and green manures. R.I.

Fertilizer experiments with celery on muck soil. (Wayne Co.) N.Y.
Cornell.

Oats, rye, and wheat as green manure for celery. R.I.

Studies of the germination of celery seed. N.J.

A study of the causes of premature development of seed stalks of celery. N.Y. Cornell.

An investigation of the changes in chemical composition of celery during storage. N.H.

Truck crop production:--(a) spinach, (b) head lettuce, (c) celery. Utah.

Celery investigations. Ky.

Cherries.

Cherry breeding investigation. Cherry pollination. (Dalles Substation) Oreg.

Pollination studies. A study of the requirements of various deciduous fruits, including a study of the factors causing sterilization in such fruits as the almond and cherry. (Davis Substation) Calif.

Investigation of the fertility and sterility of deciduous fruits, with special reference to the sweet cherry. (Davis Substation) Calif.

Cherry variety tests.--To find varieties suited to Alaska. (Sitka Substation) Alaska.

Varietal studies of cherries. Del.

HORTICULTURE--Cherries. (Cont.)

Variety test of sweet and sour cherries and of European, native, and Japanese plums.--To test a number of the newer varieties of these different fruits, and to ascertain why the sweet cherries are not successful in New Mexico. N.Mex.

Variety tests of apples, peaches, pears, plums, and cherries. Md.

The nutrition of the cherry. Mich.

Fertilizers for sour cherries. (Hudson Valley investigations.) N.Y. State.

Propagation of the apple, sweet cherry, and walnut by pretreatment of scion wood in place. Pa.

Cherry stock investigations to determine the comparative value of Mazzard and Mahaleb stock for sour cherries. Mich.

To study the interrelations of stock and scion in cherry graftage. Vt.

Pruning experiments on cherries.--To compare the effects of pruning and no pruning. Ill.

Effects of pruning on growth, with apples, cherries, grapes and gooseberries. N.Y. Cornell.

Study of factors affecting set of cherries in Sturgeon Bay district.
Study of fruiting of cherry with reference to effects of pruning and fertilization. Wis.

Investigation of the factors limiting the production of sweet cherries in Missouri. Mo.

Chicory.

The forcing of Witloof chicory to determine the effect of different methods of storing roots for forcing, and of different temperatures during the forcing process. Ill.

Citrus.

The breeding and improvement of citrus fruits. (Citrus Substation, Riverside) Calif.

The importance of selection in the improvement of citrus stocks. (Citrus Substation, Riverside) Calif.

Citrus variety test, including root stocks. (Citrus Substation) Fla.

HORTICULTURE--Citrus. (Cont.)

Testing of introduced and new varieties and hybrids of citrus and near-citrus, particularly as to their adaptability for use as stocks upon which to bud standard varieties. (Citrus Substation) Fla.

A study of the varieties of citrus and their relatives. (Citrus Substation) (Riverside) Calif.

A test of varieties of citrus fruits for Imperial Valley. (Meloland Substation) Calif.

Observation and testing of various citrus hybrids. Fla.

Cultural and fertilizer trials in bearing orange orchards on the dry-bog soils of Tulare County. (Citrus Substation) Calif.

Determination of the fertilizer requirements of Satsuma oranges. Fla.

A study of the fertilizer requirements of citrus trees. (Citrus Substation, Riverside) Calif.

Determination of the effect of various potash carriers on the growth of citrus trees and composition of the fruit. Fla.

Determination of the effect of varying amounts of potash on the composition of oranges. Fla.

Determination of the effect of various phosphoric acid carriers on the growth and production of citrus trees. Fla.

Citrus fruits. A study of cultural practices including varietal tests, bud selection studies, methods of pruning, propagation, soil improvement by use of cover crops, time and method of planting, effect of stable manure and commercial fertilizers; and a study of effect of temperature and atmospheric humidity. Ariz.

A physiological study of the effect of pruning upon the growth and productiveness of citrus trees and other horticultural plants grown under irrigation in arid regions in southern California. (Riverside) Calif.

Planning, planting and early care of a citrus orchard for future experimental work. (Riverside Substation) Calif.

Propagation experiments with citrus plants of various kinds. (Citrus Substation) Fla.

Citrus progeny and bud selection.--To afford a source of supply of budwood of record productivity and data on the results of bud selection. (Citrus Substation) Fla.

HORTICULTURE--Citrus. (Cont.)

A study of the effects of hot dessicating winds upon citrus trees in southern California. (Citrus Substation, Riverside) Calif.

Satsuma orange culture. (Fruit and Truck Substation) La.

Precoloring of Satsumas. Ala.

Pomelo production.--Soil management, fertilizers, irrigation, insect control, and pruning. Tex.

Scab-resistant grapefruit.--To develop a scab-resistant variety of grapefruit. Porto Rico.

Citrus fruit studies. Tex.

Coffee.

Comparison of commercial coffees for production.--To find coffee of good flavor which may be more prolific or more resistant to insect attacks, disease or adverse conditions of soil or climate than is the coffee grown here at present. Porto Rico.

Can chemical manures be used profitably with coffee?--To determine what fertilizers can be applied with profit to coffee plantations in Porto Rico. Porto Rico.

Collards.

Breeding a better type of Collard. Ga.

Cranberries.

Cranberry investigations. Wash.

Investigation of cranberry problems.--To determine the underlying principles of cranberry production. N.J.

Study of the cultivation of the high bush cranberry. (Viburnum opulus). Mass.

Cucumbers.

Cucumber cultural experiments, including irrigation, fertilizers, and pickling varieties. Iowa.

Cucumbers. N.Y. State.

Currants.

Currant variety tests.--To find varieties best suited to Alaska. (Sitka Substation) Alaska.

HORTICULTURE--Currants. (Cont.)

Currants: Variety studies, including field observations and orchard tests to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

To collect phenological data on a number of different varieties of strawberries, blackberries, raspberries, currants, and loganberries and to ascertain, if possible, the best varieties of these different fruits for commercial and home plantations. N.Mex.

Study of currants as to hardiness and fruitfulness. Wis.

Dasheens.

To learn best varieties and cultural methods for yautias, dasheens, and sweet potatoes for Porto Rico. Porto Rico.

Dates.

Culture and management of date orchards with special reference to the improvement of the yield and quality of fruit and the rooting of off shoots. Ariz.

Dewberries.

Breeding work with dewberries and raspberries. Tex. (A)

Raspberry and dewberry fertilization.--To determine the effect of nitrogen, phosphorus, and potash, when used singly and in combination, upon the yield and growth of the berries. Mich.

Blackberry culture:--To test the raising of blackberries and dewberries as a supplementary crop to the strawberry. (Fruit and Truck Substation, Hammond) La.

Cultural practices with dewberries.--To study cultural practices in connection with dewberries and best method of growing and handling this crop in the Coastal Plain. (Willard Substation) N.C.

Eggplants.

Fertilizer needs of egg plants to supplement stable and green manures. E.I.

Experiments with sweet potatoes, eggplants, peppers, and cantaloupes. (Ridgely Substation) Md.

Figs.

Fig variety test. Miss.

Figs--fertilizers, spraying, and varieties. Tex.

The factors affecting winter injury to figs. (Merced Substation) Calif.

HORTICULTURE--Filberts.

Filbert pollination and breeding investigations. Propagation by cuttings. Oreg.

Filbert pollination and breeding investigations. Crosses on Barcelona. Oreg.

Variety test of improved European filberts. N.Y. State.

Filbert storage. Effect of humidity on weight and texture of filberts. Oreg.

Floriculture.

Selection and trial of annual flowers of Indiana.--To develop strains that are adapted to the State. Ind.

Variety and hardiness tests of perennial and other flowers. (Northwest Substation, Crookston) Minn.

Flower trials.--To determine the best varieties of perennial and annual flowers and how they can best be grown. N.Dak.

Bulb-raising.--To learn if it is possible to grow bulbs, chiefly tulips, for market in southeastern Alaska. (Sitka Substation) Alaska.

Forcing bulbs.--To study the effect of storage temperature and other factors on the successful forcing of bulbs, using Gladioli. Ill.

Carnation culture. N.J.

Carnation breeding experiments.--To improve and extend the list of commercial varieties and to study the inheritance of color. N.J.

Old soil experiment.--To compare the yield and quality of carnations grown on soil used for several successive crops of carnations with those grown on new soil. Ill.

Effects of soil types on yields of varieties of carnations. Md.

A study of calyx splitting of carnations. Md.

Study of selection of carnations and rose plants in relation to yearly production of flowers.--To determine whether production may be increased by selecting cuttings from high producing plants. Ill.

Cultural studies with dahlias, iris, and other ornamentals. N.J.

The study of the species hybrids in the genus Digitalis. Pa.

HORTICULTURE--Floriculture.. (Cont.)

Variety tests of gladioli. N.Y. Cornell.

Effect of time of ripening of bulb on forcing qualities of Gladiolus.
Md.

Environmental factors in hydrangea culture. N.J.

Variety tests of pogon irises. N.Y. Cornell.

Hydrogen-ion concentration and other factors influencing germination and growth of orchid seeds. N.Y. Cornell.

Orchids from seed.--To study the factors influencing the germination of orchid seed. Ill.

Studies with peonies. N.Y. Cornell.

Variety tests of perennial phlox. N.Y. Cornell.

Hardy primulas, species, types and varieties of. N.Y. Cornell.

Breeding hardy roses. N.Y. Cornell.

Breeding experiments with Hibiscus rosa sinensis.--To obtain a greater variety of this ornamental plant. Virgin Islands.

Rose breeding and testing.--To popularize planting of ornamentals.
(Sitka Substation) Alaska.

Rose studies: (a) A study of the hardiness and adaptability of different varieties and types of roses, (b) a study of stocks for roses, (c) a study of the development of an American type of rose, (d) methods of winter protection and cultural methods. N.Y. Cornell.

Effect of heavy and light pruning on the growth and yield of roses. Md.

Grafting stocks.--To compare the yield and quality of roses produced by plants grafted on Odorata with those produced by the same varieties grafted on the more commonly used Manetti stock. Ill.

Rose culture. N.J.

Sweet pea bud drop investigations.--To determine: (a) The effect of fertilizers and moisture on sweet pea bud drop, (b) the effect of light, (c) the effect of humidity. Ind.

Relation of length of day to blooming of violets. Md.

Improvement of zinnias. N.Y. State.

HORTICULTURE--Floriculture. (Cont.)

The blooming and ripening of wild and cultivated ornamental plants. N.J.

Study in California decorative greens. Calif.

Studies in the art of evergreen wreath and garland making. Calif.

Fruit Bud Studies.

Causes and means of control of fruit bud formation on the apple. N.H. (A)

Fruit-bud formation and development. A study of the time of fruit-bud formation and the rate of development of the same under various environments existing in the various deciduous orchards of the State, also factors bringing about fruit-bud formation. (Davis Substation) Calif.

The effects of soil environment on fruit bud formation. Va.

Effect of defruiting upon chemical composition and fruit bud formation. N.H. (A)

Pruning as a factor in bud formation and differentiation.--To determine the fundamental causes of fruit-bud formation and differentiation as influenced by the time and manner of pruning. Oreg. (A)

Relation of light to fruit bud formation. N.H. (A)

Fruits, General. (See also RURAL ECONOMICS--Cost of Production and Accounting.

Inheritance of characters in tree, vine, and bush fruits. N.I. State. (A)

Fruit and vegetable and nut breeding, selection, and testing. Ark.

Improvement of hardy wild fruits of the Northwest by breeding and crossing. S.Dak. (A)

Breeding for hardiness in fruits. Minn. (A)

Breeding hardy fruits.--To develop by seedlings and crosses between wild and tame species varieties better adapted to North Dakota than those now existing. N.Dak.

Fruit breeding and variety testing. (South Haven Substation) Mich.

Pollination studies. A study of the pollination requirements of the various deciduous fruits, including a study of the factors causing sterilization in such fruits as the almond and cherry. (Davis Substation) Calif.

The influence of pollination on fruit yields. (Hancock, Salisbury, and College Park Substations) Md.

HORTICULTURE.--Fruits, General. (Cont.)

Propagation of fruit. Miss.

Minor work with fruits. Varieties and breeding. (Talent Substation)
Oreg.

Variety testing of fruit trees, small fruits, and vegetables. Idaho.

A test of varieties of fruit for Imperial Valley. (Meloland Substation)
(Imperial Valley) Calif.

Variety studies. (Fruits) Iowa.

Fruit variety test, and phenological notes of apple, peach, plum, cherry,
and grape. Ohio.

Variety test of fruits. (Grand Rapids and Duluth Substations) Minn.

Variety tests of fruits. N.H.

Variety trials of fruit. Oreg.

Study of varieties of tree fruits. Mass.

Variety tests of fruit trees. (Hermiston Substation) Oreg.

Variety test of fruit trees. W.Va.

Variety tests of commercial fruits. (Horticultural Substation) Mont.

Variety work in pomology. N.C.

Variety orchard of apples and miscellaneous tree fruits. Ky.

Variety tests of apples, crabs, plums, compass cherries, and nut trees.
(North Central Substation, Grand Rapids) Minn.

Varietal trials of various garden, small fruit, and orchard crops.
(Jackson Substation) Tenn.

Variety tests of tree fruits, including description of varieties as to
habits of growth and fruiting, productiveness, appearance of plant
and fruit, hardiness, resistance to insects and diseases, keeping
qualities, etc. Ill.

Tree fruits. Studies of varieties and management. Mont.

Variety tests of all tree, bush, and vine fruits that will grow in this
climate. N.Y. State.

HORTICULTURE--Fruits. General. (Cont.)

Variety test of orchard fruit.--To find varieties best suited to the State, particularly apples, peaches, and plums. Okla.

Variety tests of fruits.--To determine the hardiest and best fruits for North Dakota conditions. N.Dak.

Variety and hardiness tests of tree fruits. (Northwest Substation, Crookston) Minn.

Records as to condition, vegetative, and fruiting characteristics, and hardiness for all varieties, under trial, of apples, plums, cherries, etc. Oreg.

A study of the adaptability of fruits for the Toyah Valley. Tex.

Fertilizer tests for fruits and vegetables. (South Mississippi Substation) Miss.

Fertilizers for fruit trees in southern Oregon, including experiments with pears, peaches, and apples on different soils. (Talent Substation) Oreg.

A study of the effects of fertilizer limitation on fruit plants. Mass.

Sod in orchards plus nitrates. N.Y. Cornell.

Orchard cover crops. Wash.

Cooperative orchard experiment. Fertilizer and cultural test. (Northeast Substation, Duluth) Minn.

The nutrition of fruits, with special reference to their hardiness. Mo.

Planting distances for deciduous orchard trees. (Davis Substation) Calif.

Cultural tests of fruits.--To determine the best way of handling the soil; the best pruning methods and the best methods of winter protection for the various fruits in North Dakota. N.Dak.

Identification and study of factors determining hardiness and establishing methods to increase it. Mo. (A)

Maintaining an orchard for the testing of fruit trees, obtained through the office of Foreign Seed and Plant Introduction, U. S. D. A. Tex.

A study involving collection and improvement of ornamentals bearing edible fruits in an effort to combine beauty and productiveness in plantings. Ill.

HORTICULTURE--Fruits, General. (Cont.)

Study of root formations in cuttings. Ala.

Bud selection for establishing frame branches of fruit trees. Pa.

A study to determine the importance of competition for food as a factor influencing the setting of fruit. Ohio. (A)

Investigation on the fertility and sterility of deciduous fruits, with special reference to the sweet cherry. (Davis Substation) Calif.

Sterility in fruits.--To determine the underlying factors influencing the setting of fruit. Minn. (A)

Moisture requirements of deciduous orchards. The behavior of fruit trees under different irrigation treatments, the losses of moisture from irrigated soils, the movement and distribution of water applied to soils in irrigation. A study of the relation of soil moisture conditions to the growth of trees and vines, and the effects of irrigation on the growth and bearing of prunes. (Davis and Mountain View Substations) Calif.

Moisture requirements of deciduous orchards. (Davis and Mountain View Substations) Calif.

Phenological fruit investigations.--To secure data on the blooming and ripening periods of the different orchard fruits. N.Mex.

Tree characters of fruit varieties. Mass. (A)

Root dormancy studies in deciduous fruit trees. (Davis Substation) Calif.

The freezing point of various fruit tissues. N.Y. Cornell.

A study of cold injury to fruit trees. Ga.

Fruit tree injury from abnormal food supply. Deficiency or surplus of certain plant foods. Mont.

Toxicity in relation to fruit tree culture. Ohio.

Time of picking fruit. Picking of Spitzenberg and Newtown apples and D'Anjou pears with reference to their storage life and quality. (Hood River Substation) Oreg.

The effect of blooming and of setting and maturing fruit in growth and other behavior of trees. Calif. (A)

Factors that influence the abscission of flowers of young fruits. N.Y. Cornell.

HORTICULTURE--Fruits, General. (Cont.)

A study of the cause of June drop in fruits. Del. (A)

Spraying v. dusting tests. Fruit trees and potatoes. Oreg.

Fruit storage. Wash.

Best stage of maturity at which to harvest fruit for drying. Calif.

Study of fruit harvesting and storage. Mass.

A study of the chemical composition of fruits during development under varying conditions of treatment. Del. (A)

An investigation of the relative merits of various fruit crops as human food, stock feed, and for commercial starch production. Hawaii.

Native fruits of North Carolina. N.C.

Wild fruit plants of North Carolina. N.C.

Hardy tree fruits for high altitudes. Colo.

Bush and tree fruit investigations. (West Central Substation, Morris) Minn.

The raising of fruits. (Raymond Substation) Miss.

Growing nursery stock.--To grow fruit trees, fruit bushes, and plants of all kinds. (Sitka Substation) Alaska.

Nursery plantings of trees and shrubs. (Fruits and ornamental) Ky.

The home orchard.--Costs and returns. Mo.

Home orchard tests. (Athens and Gallion Substations) Ala.

Horticulture investigations. Experiments in the new orchard. (North-east Substation, Duluth) Minn.

Student laboratory plantings.--A study of fruit tree stocks, pruning, and planting methods. (Davis Substation) Calif.

Establishing standard grades on all fruit and vegetables. N.C.

Fruits, Tropical and Subtropical. (See also Citrus, Coffee, Figs, etc.)

Investigations regarding cultural requirements of tropical and semi-tropical fruit plants.--To determine the specific cultural requirements, such as soil, moisture, elevation, spacing, pruning and spraying, of the more important tropical and semi-tropical fruit trees and plants. Hawaii.

HORTICULTURE--Fruits, Tropical and Subtropical. (Cont.)

Investigations of methods of vegetative propagation of tropical and semi-tropical fruit plants.--To determine the specific requirements of the more important subtropical and tropical fruit plants as regards vegetative propagation, bedding, grafting, payering, cuttings, etc. Hawaii.

Development of new varieties of tropical and sub-tropical fruits by crossing, pollination and selection.--To develop by the various methods of plant breeding, new and improved varieties and strains of avocado, poha, papaya and tomato. Hawaii.

Tropical fruit investigations.--To secure a greater variety of desirable fruits for growing in Guam. Guam.

Determination of the fertilizer requirements of bananas. Hawaii.

Cacao variation in yield.--To determine extent of variation of individual cacao trees and factors affecting same. Porto Rico.

Investigation regarding edible canna (Canna edulis) and other crops as commercial sources of starch under tropical conditions. Hawaii.

Coconut fertilizer experiments.--To determine the effect of fertilizers or combinations of fertilizers on the yield and growth of coconut trees. Guam.

Coconut fertilization. The substitution of sodium in sea salt for potash.-- To learn the fertilizer requirements of coconuts and to ascertain if sodium may replace potassium in coconut fertilization. Porto Rico.

Study of jujube plants. Ariz.

Propagation of the imported mango.--To acquire, test and disseminate better varieties of mangoes than those grown locally. Porto Rico.

Mango and avocado introduction and propagation. The introduction of varieties of known merit and their multiplication by budding and other methods on native seedlings. Virgin Islands.

Improvement and study of inheritance in papaya growing. Porto Rico.

Pineapple variety and fertilizer test.--To determine the varieties of pineapples best adapted to local conditions and the most advisable kinds and rates of application of fertilizers. Guam.

Taro variety and cultural test.--To determine the varieties best adapted to lowland and upland soils: a comparison of results of irrigation v. no irrigation methods of growing these varieties. Guam.

Yam variety test.--To determine the varieties and cultural methods best adapted to local conditions. Guam.

HORTICULTURE--Gooseberries.

Gooseberry variety tests.--To find the varieties best suited to Alaska.
(Sitka Substation) Alaska.

Gooseberries: Variety studies, including field observations and orchard tests to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

Gooseberry experiments with reference to mildew-resisting powers. Wis.

Effects of pruning on growth with apples, cherries, grapes, and gooseberries. N.Y. Cornell.

Grapes.

Study of the transmission of characters in Vitis rotundifolia hybrids.
N.C. (A)

Inheritance of size of fruits in Rotundifolia grapes.--To determine the factors governing the size of berries in Vitis rotundifolia and method of transmission of the characters. N.C. (A)

Inheritance of characters in tree, vine, and bush fruits. N.Y. State. (A)

The transmissibility and degree of permanence of vegetative varieties of vitis vinifera. (Davis Substation) Calif.

The breeding of early colored grapes. Md.

Breeding Vitis rotundifolia. Ga.

Hybridization of rotundifolia grapes with other species.--To determine the various species with which Vitis rotundifolia will hybridize: To find methods of overcoming antipathy where it occurs, and to establish a scale of hybridization of Vitis rotundifolia with other species. N.C. (A)

Variety tests of grapes and strawberries. Md.

New varieties of grapes. (Davis Substation) Calif.

Variety tests of grapes. Fla. Miss.

Variety tests with grapes. S.C.

Varietal studies of grapes. Del.

Grape investigations: American and hybrid varieties. Ky.

Grape investigations: Vinifera varieties. Ky.

HORTICULTURE--Grapes. (Cont.)

Grape varieties on hardy stocks. N.Y. State.

Variety tests of all tree, bush, and vine fruits that will grow in this climate. N.Y. State.

Varieties of grapes best suited for the State. Okla.

Grapes: Variety studies, including field observations and orchard tests to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

Grapes: Fertilizer tests. Miss.

Fertilizers for grapes. N.Y. State.

Grape fertilization.--To determine the proper fertilizer applications for grapes in southwestern Michigan. Mich.

Grape experiments, including fertilizer experiments, variety tests, and pruning. W.Va.

Grape pruning. Mich.

Pruning experiments with grapes. N.Y. State.

Methods of pruning bunch grapes. S.C.

Influence on the vigor of the vine of the removal of growth in the dormant season. Calif.

Experiments in grape training and pruning. (Beltsville, Salisbury, and College Park Substations) Md.

Grape pruning and training.--To determine the best method of training native varieties of grapes and the degree of severity to use in pruning under Illinois conditions. Ill.

Grapes: Effects of different methods of pruning and of different irrigation and cultural practices. Ariz.

Effects of pruning on growth with apples, cherries, grapes, and gooseberries. N.Y. Cornell.

Storage of grape varieties.--To learn the keeping qualities of grapes in cold storage. Ill.

HORTICULTURE--Grapes. (Cont.)

Field study of the packing and shipping of table grapes, with special reference to the work of the packer and grower.--To determine the causes and methods of prevention of losses which occur between the producer and the consumer. (Davis Substation) Calif.

A study of factors involved in the production, storing, and shipping of grapes. Ariz.

A study of quality characters of rotundifolia grapes.--To study the factors controlling the various qualities of Vitis rotundifolia such as clinging character of the berries, thickness of skin, transpiration, flavor, aroma, and disease resistance, with a view to finding methods of improvement. N.C. (A)

The effect of various preliminary treatments and the time of planting of vine cuttings on the number and vigor of rootings. (Davis Substation) Calif.

Types of flowers in grapes. N.Y. State.

Pigments of the grape. N.Y. State.

Muscadine grape culture. (Fruit and Truck Substation, Hammond) La.

Growing European grapes.--To determine the feasibility and practicability of growing European grapes out of doors in Illinois. Ill..

Planting and maintenance of an instruction vineyard at Davis. (Davis Substation) Calif.

Vineyard investigations. Iowa.

Studies of Vitis vinifera grapes. Tex.

Study of the water requirement of the peach and grape as affected by pruning and special cultural methods. Ariz.

Duty of water on grapes.--To determine the best amounts of water to use and the best time of application. N.Mex.

Landscape Gardening.

Landscape architecture: Its relation and application to the rural schools of New York State. N.Y. Cornell.

A study of the ferns of New York State in their relation to landscape art. N.Y. Cornell.

New plant materials for landscape use in Iowa.--To collect reliable data on plant material regarding their landscape value under Iowa conditions.--To test on the station grounds new and little known plant materials. Iowa.

HORTICULTURE--Lettuce.

Truck and root crops: Head lettuce varietal trials. (Union Substation) Oreg.

A study of varieties and cultural methods for head lettuce. Idaho.

Fertilizer tests with lettuce. S.C.

Fertilizer and nutrient needs of greenhouse lettuce. R.I.

Fertilizer experiments with lettuce.--To study the effect of different fertilizers upon (a) size of head, (b) texture, (c) color, (d) quality, (e) yield, (f) time of maturity. Ariz.

Fertilizer needs of lettuce to supplement stable manure. R.I.

Effect of various green manure crops on lettuce. R.I.

Autumn-plowed mammoth clover, cowhorn turnips, soy beans, and spring-plowed mammoth clover, rye, timothy, for early lettuce and beets. R.I.

Fertilizer experiments with lettuce on muck soil. (Wayne Co.) N.Y. Cornell.

The rôle of soil texture in head lettuce culture under glass. Pa.

Head lettuce investigations. Ky.

Head lettuce in high altitudes. Colo.

The germination of lettuce seed. Minn.

Soil treatment for greenhouse lettuce and tomatoes. Ill.

Studies of the factors influencing heading of greenhouse lettuce. (Market Garden Substation) Mass.

Truck crop production.--(a) Spinach, (b) head lettuce, (c) celery. Utah.

Loganberries.

Small fruit experiment.--(a) To collect phenological data on a number of different varieties of strawberries, blackberries, raspberries, currants, and loganberries. (b) To ascertain, if possible, the best varieties of these different fruits for commercial and home plantations. N.Mex.

Mulberries.

Study of species of mulberries. Ariz.

HORTICULTURE--Muskmelons.

Breeding muskmelons.--To obtain varieties of muskmelons adapted to Porto Rico conditions and of good quality and yield. Porto Rico.

Muskmelon variety tests and breeding at the Graham Substation. Mich.

Cultural studies with muskmelons. N.J.

Muskmelons. N.I. State.

Nuts, General.

Nuts, fruit and vegetable breeding, selection and testing. Ark.

Studies in nut culture. N.Y. Cornell.

Nut culture in Minnesota, including selected varieties of black walnuts, shell bark hickory and the "heart nut" (*Juglans siebaldiana* var. *cordiformis*) (Crockston, Grand Rapids, Morris, Duluth and Waseca) Minn.

Nut culture in Minnesota (Southeast Substation, Waseca) Minn.

Olives.

Olives. A study of sterility, cultural practices, such as pruning, irrigation, etc. Ariz.

Onions.

Fertilizer experiments with onions on muck soil. (Wayne Co.) N.Y. Cornell.

Methods of growing onions. Mont.

Orchard Management.

Orchard management investigations. Iowa.

Orchard management investigations. Studies of tree growth and fruit bud formation as affected by commercial fertilizers, green manures, cover crops, and methods of tillage. Spraying studies. Kans.

Cooperative orchard management. Fertilizer and cultural test. Minn.

Orchard soil management investigations.--To study the effects and particularly the factors responsible for the effects of different systems of soil management on apple trees. Ind. (A)

HORTICULTURE--Orchard Management. (Cont.)

Legume cover crops and available nitrogen in Hood River Valley orchard soils.--To find out whether legume cover crops provide sufficient available nitrogen for growth and production of orchards. Oreg.

Comparison of clover sod and grass in sod mulch orchard. Mass.

Comparison of cultivation and sod mulch in a bearing orchard. Mass.

Shade crop studies. The influence on tree growth of different methods of handling alfalfa in orchards. (Hood River Substation) Oreg.

The effect of possible secretions from grass roots on fruit trees. N.Y. Cornell.

Smudging experiment.--To test a few of the different kinds of smudge pots, and to ascertain whether or not smudging is practicable. N.Mex.

Study of the soil conditions in Placer County as a possible cause of injury to orchards. Calif.

Orchard economics. Mich.

Ornamentals. Hedge Plants.

Shade trees. Ohio.

Tests of ornamental trees and shrubs. Mont.

Trees and shrubs for ornamental planting. Ariz.

Testing of introduced shrubs and ornamentals and methods of their propagation. Fla.

Variety trials of shrubs.--To determine the best shrubs for North Dakota and how they can best be used. N.Dak.

Variety and hardiness tests of ornamental shrubs and vines. (Northwest Substation, Crookston) Minn.

Variety tests of ornamental trees. (Hermiston Substation) Oreg.

Variety trials of shade trees.--To learn which trees are most hardy in North Dakota and by studying them to learn where they can best be used. N.Dak.

Variety tests of windbreak trees. (Hermiston Substation) Oreg.

HORTICULTURE--Ornamentals, Hedge Plants. (Cont.)

Ornamental perennial tests.--To study their behavior, hardiness, and adaptation to Alaska. Alaska.

Hardy and half-hardy herbaceous perennials. Ky.

Ornamental annuals in variety.--To beautify station and test their adaptation to Alaska. (Sitka Substation) Alaska.

Study of ornamental varieties and their uses, including a peony trial garden, and iris trial plot, and dahlia tests. Minn.

To determine the adaptability of various ornamental trees to higher elevations of eastern Idaho for the improvement of the homestead. (Aberdeen Substation) Idaho.

Tests of trees and ornamental shrubs for the high plains of southwestern Kansas. (Tribune Substation) Kans.

The testing of trees and ornamentals for western Minnesota conditions. (West Central Substation, Morris) Minn.

The development of hardy ornamentals and flowers for the northwest. S.Dak.

Ornamental shrubbery tests.--To study their hardiness. (Sitka Substation) Alaska.

Horticultural investigations. The planting of ornamental trees and shrubs for the homestead. (High Altitude Substation) Idaho.

Study of trees with respect to environment.--To determine the adaptability of various ornamental trees to this area for the improvement of the homestead. (Aberdeen Substation) Idaho.

Growth and hardiness tests of ornamental and windbreak trees. (Northwest Substation, Crookston) Minn.

To try out forest and ornamental trees to determine their value for shelter belts, post timber, and other uses. (Edgeley Substation) N.Dak.

Nursery plantings of trees and shrubs (fruit: and ornamental). Ky.

Study of tamarisks, particularly Tamarix articulata. Ariz.

Parsnips.

Seed production studies with carrots and parsnips. (Aberdeen Substation) Idaho.

HORTICULTURE--Peaches.

Cross breeding peaches. (Riverside Substation) Calif.

Peach breeding for hardy sorts. Mo.

Peach breeding: The growing of peach trees from controlled pollinations to determine the behavior in transmission of specific parental characters. Ill. (A)

Peach breeding experiments.--To improve the present list of commercial varieties and to study the inheritance of unit characters in the peach. N.J.

Peach breeding work.--To produce new varieties; an earlier variety than the Mayflower; an earlier yellow fleshed variety than Arp Beauty; earlier free-stone varieties of both white and yellow fleshed peaches; varieties hardier in bud. (Willard and Southern Pines Substations) N.C.

Bud inheritance on yield of peaches. Conn. State.

Peaches: Variety tests. Ala.

Variety tests of apples, peaches, pears, plums, and cherries. Md.

Peaches: Variety tests. Miss.

Varietal studies of peaches. Del.

Peaches: Variety studies including field observations and orchard tests to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

Phenological studies and variety test with peaches.--To determine the best varieties for North Carolina and the blooming and ripening dates of different varieties. (Willard, Statesville, and Swannanoa Substations) N.C.

Fertilizer and variety tests with peaches. Ga.

The fertilization of peach orchards. (Salisbury, Berlin, Mt. Airy, and College Park Substations) Md.

Fertilizers for peaches and apples. W.Va.

Fertilizer test on young and bearing peach trees. S.C.

Use of fertilizers on the peach orchard. N.H.

HORTICULTURE--Peaches. (Cont.)

Local orchard experiments. Response of peach trees to fertilizers under different soil conditions. (Salem, Winchester, Crozet, Amherst, Appomattox, and Berryville Substations) Va.

Plant food studies with peaches. N.J.

Functions of nitrogen, potash, and phosphoric acid in the production of the peach. Del. (A)

Relative effect of various carriers of nitrogen upon peach production. Del.

Nitrate of soda test on bearing peach trees. S.C.

Peach fertilization.--To determine the effect of applications of nitrate of soda on peaches at different growth stages on fruit production at the Graham Substation. Mich.

The effect of fertilizers, especially nitrate of soda, on the growth, yield, longevity, and "yellows" of peaches. Conn. State.

A study of the nutrition of peach trees and the factors which influence crop production. Ark.

Soil treatments in peach orchards.--To determine the relative importance of clean cultivation, fertilizer treatments, cover crops, etc. on production. Ill.

Peach pruning and fertilizing.--To compare the practices of thinning and heading back of trees, and to note the effect of nitrogen fertilizers on trees pruned by these two systems. Ill.

Peach pruning experiments. (Salisbury, Mt. Airy, and College Park Substations) Md.

Pruning experiments with peaches. Miss.

Peach pruning experiments. A study of the various methods of pruning peach trees to determine the effect of various modifications of pruning upon the amount, form, and character of the wood growth, the effect of pruning during the dormant season, the effect of pruning upon fruit production and the relation between various methods of pruning and the essential details of orchard management. N.J.

Summer pruning peach trees.--To determine its value with "dehorned" trees and with young peach trees. (Willard, Statesville, and Swannanoa Substations) N.C.

"Dehorning" peach trees.--To determine the value of "dehorning" in renewing and invigorating peach trees. (Statesville and Swannanoa Substations) N.C.

HORTICULTURE--Peaches. (Cont.)

The effect of bud and spur defoliation on fruit bud formation, with the peach. Md.

Dusting peach and apple trees for the control of insects and diseases. Md.

A comparison of spraying and dusting on apples and peaches, especially to try new dusts. Conn. State.

Root stocks for peaches. N.J.

To determine the cause of premature development of peach buds and how to prevent premature development. Okla. (A)

A study of the hardiness of peach varieties in western North Carolina. (Swannanoa Substation) N.C.

A study of the behavior of fruit buds and twigs on the hardiness of the peach. Md. (A)

Peaches:- Size studies. Miss.

Factors influencing size peaches. N.J.

Study of the water requirement of the peach and grape as affected by pruning and special cultural methods. Ariz.

Study with peaches on change of permeability and its relation to availability. Del. (A)

The rejuvenation of peach orchards. (College Park and Smithsburg Substations) Md.

The longevity and adaptability of the Indian cling peach. A comparison of the longevity of the modern commercial varieties of peach when budded on to the Indian cling stock v. the same variety on stock from the mixed seed obtained on the market: To test the Indian cling seedlings as to heredity or stability of character, and as direct fruit producers. Tex.

Pears.

Blight-resistant pears.--To propagate blight-resistant pear stocks on which to graft standard varieties and to develop resistant variety or varieties of suitable market qualities. Ill.

Breeding pears for resistance to blight. Ga.

Pear variety test. Miss.

HORTICULTURE--Pears. (Cont.)

Varietal studies of pears. Del.

Testing new varieties of pears. (Talent Substation) Oreg.

Variety tests of apples, peaches, pears, plums, and cherries. Md.

Pears: Variety tests with special reference to susceptibility to blight. Ala.

Test orchard of pear stocks. (Talent Substation) Oreg.

Test of fertilizers for pears. Mass.

Comparison of cultivation and heavy mulching for apples and pears. Mass.

Pear spraying investigations to determine a safe spray application for D'Anjou pears. (Hood River Substation) Oreg.

Horticultural investigations. The introduction and testing of apples, pears, and plums to determine their winter hardiness and adaptability to high altitudes. (High Altitude Substation) Idaho.

A study of the graft union from the standpoint of the alleged difficulty of top-working the Keiffer pear to other varieties of pear. N.Y. Cornell.

Pruning pears, apples, and small fruits. Nebr.

Studies in blight-resistant root stocks for pears. N.Y. Cornell.

To determine the best methods of propagating blight-resistant pear stock from root cuttings. (Talent Substation) Oreg.

Tests with strawberries and potatoes and blight-resistant pears. (Hood River Substation) Oreg.

Blight resistance in pears. Relative resistance or susceptibility to pear blight of all known species of Pyrus. (Talent Substation) Oreg.

Time of picking in relation to time of ripening. Oreg.

Time of picking in relation to tonnage. Oreg.

Control of loss of weight and volume. Oreg.

Effect of temperature and turgidity on pressure test for maturity of pears. Oreg.

Development of a pressure test for maturity of commercial varieties of pears. Oreg.

HORTICULTURE--Pears. (Cont.)

Factors influencing the bearing habit of the D'Anjou pear, including girdling, bridge grafting, spur pruning, artificial beading of branches, heading v. thinning out, etc. (Hood River Substation) Oreg.

Pear breeding. (Talent Substation) Oreg.

Pear breeding investigations. D'Anjou pear pollination. (Corvallis Orchard Co.) Oreg.

Pollination of pears. (Comice and D'Anjou) (Talent Substation) Oreg.

Variety pollination experiment with pears. (a) A variety test of 78 varieties, (b) to study the relative resistance of these varieties to the pear blight, (c) to study the degree of self sterility or self fertility. N.Mex.

Testing pear seedlings. Oreg.

The breeding of blight-resistant pears. Md.

Peas.

Breeding of field and canning peas. (a) Field and canning peas, (b) peas for northern Wisconsin. Wis.

Garden and field pea investigations. Breeding and improvement. Idaho.

Garden and field pea and bean investigations. Variety tests. (Aberdeen Substation) Idaho.

Garden and field pea investigations.--To determine the varieties best adapted to irrigated and dry lands. (High Altitude Substation) Idaho.

Garden and field pea investigations. Cultural experiments. Idaho.

Rate of seeding garden peas. Md.

Garden and field pea experiment to determine time of planting and best varieties to grow. N.Mex.

Inoculation experiments with garden peas. Md.

Experiments with garden peas for canning and market. (Ridgely Substation) Md.

Best crop to precede garden peas. Md.

HORTICULTURE--Peas. (Cont.)

A study of the influence of temperature on the growth of peas. Md.

Influence of climatic factors and methods of handling upon carbohydrate and protein metabolism in the garden pea.--To secure information on the factors affecting yield and shipping quality in connection with table quality. (Davis Substation) Calif.

Garden and field pea investigations. Classification studies. Idaho.

Peas. N.Y. State.

Pecans.

Pecan breeding.--To produce improved varieties and varieties especially suited to North Carolina. (Willard Substation) N.C.

Pecans: Variety tests. Ala. Miss.

Variety tests of pecan trees. Fla.

Compilation of available information upon the varieties of pecans best suited to different localities and soil types of Florida, and collecting information as to the best proven methods of fertilizing, propagating and growing pecans. Fla.

Variety testing of pecans.--To determine the most desirable varieties for North Carolina. (Willard, Kingsboro, Statesville, and Swannanoa Substations) N.C.

Pecan investigation.--To test the better varieties of pecans to see if some cannot be found which will prove hardy in this part of Oklahoma. Okla.

Sterility and variety tests with pecans. Ga.

Cooperative fertilizer tests in pecan orchards with growers. Fla.

Fertilizer and cover crop test with pecans. (Selma Substation) Ala.

Cultural practices with pecans.--To determine the most desirable cultural practices in handling pecan orchards. (Willard and Kingsboro Substations) N.C.

Pecan, English walnut, and almond experiment (a) to ascertain whether New Mexico climatic and soil conditions are suitable for the growing of these nut trees; (b) to study the different methods of preventing winter injury to the trees; and (c) an investigation on originating, if possible, a late blooming almond. N.Mex.

HORTICULTURE--Pecans. (Cont.)

Pecan culture in California. A study of the adaptability of present commercial varieties to the soil and climatic conditions of California, and of the possible further development of the pecan industry in the State. (Davis Substation) Calif.

A study of the commercial value of pecans in North Carolina. (Willard, Kingsboro, Statesville, and Swannanoa Substations) N.C.

Pecans: Comparison of nuts grown here and in other sections of the State. Miss.

Study of fruit bud differentiation of pecans and internal changes associated with the proceeds. Ala.

Walnut and pecan studies. A study of environmental factors with especial attention to top grafting Juglans major with cultivated varieties. Ariz.

Individual tree performance records of pecans. (Willard and Kingsboro Substations) N.C.

Cracking tests with pecans.--To determine the value of different varieties as regards cracking quality. N.C.

Pecan production. Tex.

Pecans. La.

Peppers.

Fertilizer and cultural tests with peppers. Ga.

Culture of peppers. A study of the relation of certain cultural methods to earliness and yield. Ill.

Experiments with sweet potatoes, eggplants, peppers, and cantaloups. (Ridgely Substation) Md.

Persimmons.

Persimmon variety test. Miss.

Pineapples.

The limiting factors in fertilizing affecting the growth and production of the pineapple plant.--To determine the causes for differences in the behavior of the plant with different nitrogenous fertilizers. (San Juan Substation) Porto Rico.

HORTICULTURE--Pineapples. (Cont.)

A Study of the relation of certain physical properties of Hawaiian soils to pineapple and banana fertility. Hawaii.

The factors influencing time of blooming of the pineapple plant.--To determine the cause of blooming at certain times, regardless of the size or age of the plant which, when premature, results in undersized fruit. (San Juan Substation) Porto Rico.

Pistachios.

Study of pistach trees (Pistacia vera) Ariz.

Plums.

The pollination of domestic and triflora plums under California conditions. (Mountain View Substation) Calif.

Pollination: To determine how and to what extent standard varieties of apples and plums are self barren and also to determine which of the standard varieties may best be used as pollinizers for self-barren and partially self-barren varieties. (South Haven Substation) Mich.

Varietal studies of plums. Del.

Variety tests of apples, peaches, pears, plums, and cherries. Md.

Variety test of plums.--To determine the best varieties of plums to recommend to farmers in this locality. (Dickinson Substation) W.Dak.

Variety test of European, native, and Japanese plums and sweet and sour cherries.--To test a number of the newer varieties of these different fruits. N.Mex.

Varieties and seedlings of plums best adapted to Wisconsin conditions. Wis.

Horticultural investigations. The introduction and testing of apples, pears, and plums to determine their winter hardiness and adaptability to high altitudes. (High Altitude Substation) Idaho.

A test of stocks for plums. N.Y. State.

Prunes.

Prune breeding investigations. Testing seedlings. Oreg.

Prune type of Prunus species. A study of the origin of the "Marshall Prune" ^{study} of the prune character, including internal and external character of the fruit and the transmission of the prune character. N.C. (A)

HORTICULTURE--Pruning. (See also specific fruits)

Pruning experiments. N.Y. State. (Hood River Substation) Oreg.

Pruning tests with various fruits. Propagation of orchards in place.
(South Mississippi Substation, Poplarville) Miss.

Testing methods of pruning. Mass.

Pruning studies. A study of wood growth and total fruit crop of the various deciduous fruit trees grown in California, when subjected to different pruning treatments. (Davis Substation) Calif.

Pruning studies. The effect of different methods of pruning upon deciduous fruit. Ariz.

Pruning experiment.--To study the effect of different times and styles of pruning. N.Mex.

To study the effects of pruning upon the tree and some of the causes contributing thereto. Ind.

A physiological study of the effect of pruning upon the growth and productiveness of citrus trees and other horticultural plants grown under irrigation in arid regions in Southern California. (Riverside Substation) Calif.

Physiological effect of pruning fruit trees, including peaches, pears, plums, cherries, and quinces. W.Va.

The effect of the pruning necessary to secure various forms on the leaf surface, growth, and fruiting habit of apples, pears, plums, quinces, and cherries. N.Y. Cornell.

Pruning as a factor in bud formation and differentiation.--To determine the fundamental causes of fruit-bud formation and differentiation as influenced by the time and manner of pruning. Oreg. (A)

Summer v. winter pruning experiment. Idaho.

Raspberries.

Genetic studies with bramble fruits, especially raspberries. Determination of factors limiting culture of Rubus species in the South Atlantic States. Hybridization among species. N.C. (A)

HORTICULTURE--Raspberries.. (Cont.)

Raspberry breeding. Ill.

Breeding work with dewberries and raspberries. Tex. (A)

Raspberry variety tests.--To test them out to find the best sorts.
(Sitka Substation) Alaska.

Raspberries: Variety studies, including field observations and orchard tests, to gain information relative to their behavior, commercial possibilities, and adaptation for the home orchard or garden. Va.

To collect phenological data on a number of different varieties of strawberries, blackberries, raspberries, currants, and loganberries. To ascertain, if possible, the best varieties of these different fruits for commercial and home plantations. N.Mex.

Comparison of Cuthbert raspberries from the Thumb district of Michigan with Cuthberts from southwestern Michigan. (South Haven Substation) Mich.

Raspberries--cultural and spraying experiments. Mich.

Raspberry fertilization. (South Haven Substation) Mich.

Raspberry and dewberry fertilization.--To determine the effect of nitrogen, phosphorus, and potash, when used singly and in combination, upon the yield and growth of the berries. Mich.

Raspberries. Miss.

Rhubarb.

The development of an improved variety of rhubarb. Pa.

Chemical fertilizers for rhubarb, with special reference to sulphate of ammonia. (Chillum and College Park Substations) Md.

Rhubarb forcing:--To determine the best age of roots for forcing and the effect of watering and of temperature on yield and color of forced crops. Ill.

Small Fruits. General.

Genetic studies with bramble fruits, especially raspberries. Determination of factors limiting culture of Rubus species in the South Atlantic States. N.C. (A)

Inheritance of characters in tree, vine, and bush fruits. (N.Y. State. (A)

HORTICULTURE--Small Fruits, General. (Cont.)

Breeding of horticultural plants, including tomatoes, small fruits, and celery. Utah.

Variety tests of bush fruits. Ma.

Small fruit varietal tests.--The behavior and performance of small fruit and grape varieties, with special reference to botanical characteristics, insect and disease resistance, ability to withstand unfavorable climatic conditions, blooming and ripening dates and average yields. Ill.

Variety testing of fruit trees, small fruits and vegetables. Idaho.

Variety test of small fruit.--To determine the best variety for conditions here of gooseberry, currant, junberry, raspberry, strawberry, and grape. (Dickinson Substation) W.Dak.

Varietal trials of various garden, small fruit, and orchard crops. (Jackson Substation) Tenn.

Varietal studies of small fruits. Del.

Small fruit variety testing. (South Haven Substation) Mich.

Variety testing of small fruits from fruit breeding station. (Northeast Demonstration Farm, Duluth) Minn.

Variety tests of all tree, bush, and vine fruits that will grow in this climate. N.Y. State.

Variety and hardiness tests of small fruits. (Northwest Substation, Crookston) Minn.

Bush fruits.--To test some of the most popular varieties of bush fruits and strawberries. Okla.

Variety test of raspberries, blackberries, dewberries, gooseberries, currants, high bush cranberries, blueberries, strawberries, and grapes. (North Central Substation, Grand Rapids) Minn.

Bush fruit experiments. Fertilizer and variety tests (41-C) W.Va.

Variety and cultural tests with small fruits. (Horticultural Substation) Mont.

Fertilizer tests on small fruits.--To study the effect of commercial fertilizers in the growing of small fruits and determine the fertilizer needs of raspberries, blackberries, currants, gooseberries, and grapes. Ill.

HORTICULTURE--Small Fruits, General. (Cont.)

Cultural methods and adaptation of small fruits. Ga.

A study of the relation of winter injury to brambles to differential fertilization with potash salts. Mass. (A)

Pruning small fruits, pears, and apples. Nebr.

Irrigation of small fruits and vegetables. Mich.

Vegetable and small fruit studies for the Delta. (Delta Substation) Miss.

Experiments with small fruits. Mont.

Bush and tree fruit investigations. (West Central Substation, Morris) Minn.

Spinach.

Spinach. A study of the effects of different cultural methods, particularly fertilizers, upon the yield, quality, and time of maturity. Ariz.

Fertilizer needs of spinach to supplement stable and green manures. R.I.

Truck crop production:- (a) Spinach, (b) head lettuce, (c) celery. Utah.

Physiological study of flowering in spinach. N.Y. Cornell.

Spraying, Dusting, and Fumigating, General. (See also CHEMISTRY--Chemical Studies, Various; HORTICULTURE--specific fruits; PLANT PATHOLOGY--Fungicides and diseases of specific plants; and ECONOMIC ENTOMOLOGY - Insecticides and Fumigants.)

Spraying fruits for insect and fungus diseases.--To determine the benefit to be derived from the addition of a substance to increase the spreading qualities of lime sulphur. Mo.

Some phases of dusting for control of fruit diseases and insects. N.Y. Cornell.

Spraying--fruit disease control. Ohio.

Spraying investigations upon tree fruits. N.J.

Dusting and spraying for the control of diseases in fruit nursery stock. N.Y. Cornell.

Experimental spraying for control of mildew under glass. Mass.

HORTICULTURE--Spraying, Dusting, and Fumigating, General. (Cont.)

Improvement of methods of spraying vegetable crops. N.Y. State.

Spraying, with special reference to meeting the local requirements to control insect and fungus diseases. (Salem, Winchester, Crozet, Amherst, Appomattox, and Berryville Substations) Va.

A study of the physical properties of insecticides and fungicides. Oreg. (A)

Dusting and spraying project. Mich.

Duration of protective effect of dusts and sprays. N.Y. State.

Testing of the value of various spreaders for sprays. Idaho.

A test of spreaders in spray materials. Ill.

Investigation of stickers, spreaders, and diluents for spraying and dusting, particularly the latter.--To find satisfactory dust materials that will take the place of liquid mixtures; to find a spreader for commercial lime-sulphur and a sticker for self-boiled. N.J.

Physiological studies on the effect of sprays on apple leaves and fruits.--To compare the effect of spraying with lime sulphur on the upper surface, the lower surface, and both surfaces of leaves, as well as the effect of sprays on water content of leaves, transpiration, and dropping of the fruit. Ill.

To test new spray materials as they become commercially important. Mass.

Scab spraying investigations. Testing of proprietary sprays. (Hood River Substation) Oreg.

Scab spraying investigations. Studies of spraying practices as a basis for spraying program. (Hood River Substation) Oreg.

Scab spraying investigations. Determining strength of dilutions necessary to effect control. (Hood River Substation) Oreg.

Adherence of sprays and dusts to foliage. N.Y. State.

How to prepare from leaf tobacco or waste a dependable infusion for spraying. Ky.

Factors influencing the selection of oil sprays. Wash. (A)

The stimulating effect of Bordeaux mixture on plants, especially the potato plant. Vt. (A)

HORTICULTURE--Spraying, Dusting, and Fumigating, General. (Cont.)

A method for the determination of the persistence of sulphur spray and dust coatings. W.F. Cornell.

Factors influencing burning of foliage by Paris green. Mont.

Physiological effects of arsenical compounds on vegetation. Mont. (A)

Spray equipment investigation. Va.

Squash.

Pure line breeding with squash and strawberries. Study of influence of continued self-pollination on quality, quantity, seed production, vigor, and vitality of progeny; maintenance of pure lines without inter-crossing. Vt.

Squash fertilizer experiments. N.H.

Stock and Scion. (See also specific fruits)

Root stock investigations. An endeavor to find introduced forms or native species that are better adapted to California conditions. (Davis Substation) Calif.

Nursery stock investigations in relation to bud selection, root selection and the reciprocal relation of stock and scion. Me. (A)

Stock and scion investigations.--To study the interrelation of stock and scion in both its commercial and scientific aspects. Ind.

Cion trials. A study of the relationship of the parentage of cions to subsequent fruitage; of the question whether cions from high bearing, low bearing, and constant bearing trees will perpetuate these characteristics or whether they will be modified by the characteristics of the tree into which they are grafted. Vt.

Improvement of fruit stocks. Pa.

Strawberries.

Strawberry breeding. Ky.

Strawberry breeding.--To create varieties that shall be suited to the Alaska climate: particularly in point of hardiness. (Sitka Substation) Alaska.

HORTICULTURE--Strawberries. (Cont.)

Pure line breeding with squash and strawberries. Study of influence of continued self-pollination on quality, quantity, seed production, vigor, and vitality of progeny; maintenance of pure lines without intercrossing. Vt.

Fruit breeding. Especially apples and strawberries. Nebr.

Strawberry breeding investigations. Oreg.

Strawberry variety tests.--To test varieties cultivated in the States and in Europe and to study their adaptability for hybridization. (Sitka Substation) Alaska.

Variety tests of grapes and strawberries. Md.

Strawberry variety tests. Wis.

Variety tests of strawberries. (Fruit and Truck Substation, Hammond) La. Miss.

Variety testing of strawberries.--To determine if there are any varieties of strawberries more desirable as commercial varieties than Blondike and Missionary, the two leading sorts. (Willard Substation) N.C.

Bush fruits.--To test some of the most popular varieties of bush fruits and strawberries. Okla.

Variety tests. Tests with strawberries and potatoes, and blight-resistant pears. (Hood River Substation) Oreg.

Comparison of Blondike and Missionary varieties of strawberries for commercial purposes. (Willard Substation) N.C.

Strawberry experiments, including variety test, bud variation, and strawberry culture, fertilizer experiments. W.Va.

Variety and fertilizer tests of strawberries. (Ridgely Substation) Md.

Strawberry variety trials and cultural experiments. Ky.

Cultural practices with strawberries.--To determine the most satisfactory planting date and the value of removing blossoms and cutting runners in growing strawberries under the hill system. (Willard Substation) N.C.

Strawberry cultural and mulching experiments. (South Haven Substation) Mich.

The fertilization of strawberries. (College Park, Ridgely, Salisbury and Marion Substations) Md.

HORTICULTURE--Strawberries. (Cont.)

Strawberry fertilizer test. N.H.

Plant food and cultural studies with strawberries. N.J.

Fertilizer tests with strawberries. (Fruit and Truck Substation, Hammond) La.

Strawberry fertilization. Ohio.

The use of nitrate of soda as a fertilizer for strawberries. N.H.

Fruit bud formation of the strawberry. Pa.

Sterility of strawberries.--Cause and remedies. Vt. (A)

To collect phenological data on a number of different varieties of strawberries, blackberries, raspberries, currants, and loganberries.--To ascertain, if possible, the best varieties of these different fruits for commercial and home plantations. N.Mex.

An experiment to determine what factors influence size of berries, number of berries per cluster and number of clusters per plant of the strawberry. N.H.

Strawberry topping experiments. (Hood River Substation) Oreg.

Economics of strawberry production. (Hood River Substation) Oreg.

Sweet Corn.

Breeding sweet corn. N.Y. Cornell.

Sweet corn breeding. Ky.

Sweet corn breeding experiments. N.H.

Sweet corn breeding investigations.--The production of strains of sweet corn which will yield better, pack better quality canned corn, mature more uniformly or earlier or later, and be more uniform as to size and type. Ill.

Improvement of yield, quality and uniformity of sweet corn. Wis.

Sugar corn seed production and breeding. Md.

Sweet corn breeding. Production of a strain of sweet corn for Porto Rico. Porto Rico.

Improvement of yield, quality, and uniformity of sweet corn. Wis.

HORTICULTURE--Sweet Corn. (Cont.)

The control of root rot and improvement of sweet corn by seed selection.
Conn. State.

Sweet corn fertiliser investigations.--To determine the effect of nitrogen, phosphorus, and potash on the yield and quality of canning factory sweet corn. Ill.

Metabolism studies with sweet corn. Md. (A)

Sweet corn investigations. Seed studies, including (a) covering of the seed, and (b) the use of immature seed. Iowa.

A study of the effects of removal of suckers of sweet corn, on earliness, size of ears, total yield, and other conditions. N.Y. Cornell.

Studies of yield and digestibility of various cuttings of alfalfa and sweet corn. Wash.

Sweet corn seed improvement.--To study seed improvement of sweet corn and to compare home-grown seed with imported^{seed} from the East and North.--To discover the influence of the source of seed upon the percentage of sugar in sweet corn, selfing to establish practical or complete homozygous strains. Ind.

Sweet corn investigations.--To artificially cure sweet corn seed so that the large losses due to poor germination and rotting may be reduced. Ill.

Tomatoes.

A study of inheritance in the tomato. Pa.

Breeding of tomatoes.--To obtain varieties of tomatoes adapted to Porto Rico conditions and of good quality and yield. Porto Rico.

Breeding disease-resistant tomatoes. Del.

Breeding disease-resistant tomatoes with special reference to the western blight or summer blight. (Riverside Substation) Calif.

Breeding of horticultural plants, including tomatoes, small fruits and celery. Utah.

The development of wilt-resistant tomatoes. Ca.

Development of a wilt-resistant greenhouse tomato. Ind.

To develop a more satisfactory strain of tomato for a canning crop tomato. Studies of plant growing and fertilizer requirements; also seed production. Ind.

HORTICULTURE--Tomatoes. (Cont.)

Tomato selection experiments. The value of selection on yield and earliness. N.H.

Seed selection tomatoes.--Effect of using home-grown seed as contrasted with purchased seed. Mont.

Tomato seed selection for disease resistance. Mo.

Improvement of varieties and strains of tomatoes. (Graham Substation) Mich.

Relative value of pollination methods of greenhouse tomato varieties. Oreg.

Tomato experiments.--To try the different methods of producing early tomatoes; to test a number of representative varieties of the early and late ripening kinds; to try different cultural methods. N.Mex.

Tomato variety, selection and breeding test.--To determine the varieties of tomato best suited to local conditions; To improve the local (Cristobal) variety; To develop a suitable variety by crossing of imported and local varieties. Guam.

Tomato variety tests. Colo.

Tomato variety experiment. N.H.

Tomatoes: The relative merits of varieties for different purposes. Pa.

Variety test with different vegetables and tomatoes for commercial growing in Mississippi. Miss.

Tomato investigations. Contrast in value of varieties- Grand Rapids Forcing and Bonny Best. Oreg.

Tomatoes: Variety culture and fertilizer tests. (Holly Springs and Raymond Substations) Miss.

Fertilizer and nutrient needs of the tomato in the greenhouse. R.I.

Fertilizer experiments with tomatoes. Iowa.

A study of the fertilizer requirement of tomatoes and cabbage. Pa.

Plant food studies with tomatoes. A study of the effect of different fertilizer elements and mixtures of these elements. A comparison of home and commercial fertilizers and rate and methods of application of fertilizers. N.J.

Fertilizer needs of tomatoes to supplement stable and green manures. R.I.

HORTICULTURE--Tomatoes. (Cont.)

Field studies in tomato nutrition under various combinations of fertilizers and manures, with laboratory studies of carbohydrate and nitrogen contents of the plants. N.Y. Cornell.

Red clover, sweet clover, and vetch as green manure for early tomatoes. R.I.

A study of the effect of phosphorus upon the time of maturity, quality, yield, and chemical composition of the tomato fruit. N.H.

Nutrition of the tomato. Studies intended to throw light upon conditions within the plant, correlated with certain external treatments and the response of the plants to those treatments. At present confined to nitrogen nutrition. N.Y. Cornell.

Soil treatment for greenhouse lettuce and tomatoes. Ill.

The propagation of wilt-resistant strains of tomatoes. Ark.

Improvements in growing canning tomatoes. (San Francisco Bay Region) Calif.

Factors affecting setting of fruit on the tomato. Okla. (A)

Tung Oil Nut Trees.

Propagation and planting tests with the tung oil nut tree. Fla.

Vegetables and Truck Crops, General.

Breeding and selection of vegetables, including variety trials with the squash, pea, melon, bean, onion, tomato, sweet corn, pepper, celery, beet, head lettuce, and cabbage. Minn.

Vegetable and fruit and nut breeding; selection and testing. Ark.

Breeding vegetables for North Dakota.--To develop new varieties and improve old ones, especially for North Dakota conditions. N.Dak.

Breeding disease-resistant truck crops. Ohio.

Vegetable plant improvement; spinach, sweet corn, eggplant, and peppers. Ohio.

Vegetable gardening - variety testing. (Northeast Substation, Duluth) Minn.

Variety testing of vegetables. (Graham Substation) Mich.

Variety tests of vegetables.--To find the varieties best suited to that State. Okla.

HORTICULTURE-Vegetables and Truck Crops, General. (Cont.)

Variety tests of garden crops. (Northwest Substation, Crookston) Minn.

Testing new varieties and strains of vegetables. Md.

Varietal trials of various garden, small fruit, and orchard crops.
(Jackson Substation) Tenn.

Variety testing of fruit trees, small fruits, and vegetables. Idaho.

Tests of vegetables.--To find the varieties that do best in this climate.
(Sitka Substation) Alaska.

Variety test with string beans, melons, and onions, melon breeding,
onion seed production, source of potato tubers for planting. Utah.

Varietal trials of various market garden crops, such as Irish potatoes.
Tenn.

Garden crop investigations. Variety tests and source-of-seed tests.
Kans.

Variety test with different vegetables and tomatoes for commercial grow-
ing in Mississippi. Miss.

Variety tests of vegetables.--To determine hardiest and best varieties
for North Dakota conditions. N.Dak.

Variety cultural tests of vegetables. (Judith Basin Substation) Mont.

Variety and cultural tests of vegetables under dry land conditions.
(Huntley Substation) Mont.

Variety tests of garden crops with commercial fertilizers, both with and
without manure. (North Central Substation, Grand Rapids) Minn.

A study of Maryland vegetables as to varieties, cultural methods, and
marketing. Md.

Cultural tests with vegetables.--To determine the best planting dates,
distance, and methods for growing common vegetables in North Dakota.
N.Dak.

Garden fertilization. (Northeast Substation, Duluth) Minn.

Amounts of manures and fertilizers to keep soil fertile for vegetable
production. Md.

Fertilizer experiments with market garden crops. Ill.

Fertilizer tests for fruits and vegetables. (South Mississippi Substa-
tion) Miss.

HORTICULTURE--Vegetables and Truck Crops, General. (Cont.)

Fertilizers for truck crops. (Wooster and Marietta Substations) Ohio.

Test to determine fertilizer needs of different vegetables. Ala.

Fertilizer tests of garden crops. (Northwest Substation, Crookston) Minn.

Soil management and fertilizer studies with vegetable crops. A fundamental study of the parts played by manures and commercial fertilizers in the production of vegetables under intensive conditions. N.Y. Cornell.

Commercial fertilizer, with and without manure on truck crops. (North Central Substation, Grand Rapids) Minn.

Effect of continued applications of potash salts on vegetable production. Ill.

Vegetable production with stable manure v. green manure when supplemented with chemicals. R.I.

Fertilizer experiments with truck crops in a three-year rotation on brown silt loam in soil of the corn belt. Ill.

Vegetable growers' rotations. Crops variable: Ten cords manure v. fertilizer alone. R.I.

Variable cash crops preceded by sweet clover, alfalfa, mammoth clover, and by vetch to determine their hardiness and value as green manures and nitrogen fixers. R.I.

Vegetable growers' rotations: cabbage-beets, tomatoes- spinach, lettuce-celery; also with beets replaced by vetch, sweet clover and red clover for green manures and with spinach and lettuce similarly replaced by rape (autumn), oats (spring), rye and wheat; with 32 tons of stable manure alone, 16 tons of manure and fertilizer having more and less nitrogen, phosphorus and potassium, and with peat to supply organic matter equal to that in 16 tons of manure. R.I.

Beets followed by clover, by cowhorn turnips, and by soy beans (all three plowed under in fall) and by clover, rye, and by timothy (plowed under in spring); and lettuce followed by the same green manure scheme: Fertilizer only. R.I.

Beets-cauliflower, spinach-carrots, eggplant, also with cauliflower replaced by rye grass and clover for green manure and eggplant followed by rye for green manure; with 31, 16, 8 and 0 tons manure, and fertilizer in each case; more and less nitrogen, phosphorus and potassium; peat; sub-soiling, and gravelling; horse manure with straw v. sawdust or shavings bedding. R.I.

HORTICULTURE--Vegetables and Truck Crops, General. (Cont.)

Greenhouse rotations: Lettuce, lettuce, cucumbers. Includes sterilization. Also radishes (two or more times) and tomatoes, both rotations with manure compost, sand, peat and fertilizer, with more and less nitrogen, phosphorus and potassium to determine nutrient requirements. R.I.

Various vegetable and truck crop rotations. R.I.

Vegetable seed growing.--To learn how far it is possible to produce vegetable seed in Alaska and the varieties best suited to the purpose (Sitka and Fairbanks Substations) Alaska.

Variety improvement through seed and root selection. Mass.

Source-of-seed tests with vegetables.--To determine what garden seeds tend to degenerate when grown for several successive generations, from locally grown seed, and the rate of degeneration for different vegetables. Virgin Islands.

Comparison of southern and northern grown vegetable seed. (South Mississippi Substation) Miss.

A study of seed production of garden crops. Ga.

Transplanting studies with vegetables. N.Y. Cornell.

A study of the effect of climate and soil on the composition of vegetables. Hawaii.

Irrigation of truck crops. Iowa.

Irrigation of small fruits and vegetables. Mich.

Overhead irrigation of garden crops. (Northwest Substation, Crookston) Minn.

The irrigation of market garden crops with regard to profitableness. Tenn.

The raising of vegetables. (Raymond Substation) Miss.

Disease-resistant vegetables. Ohio.

The selection of hardy and disease-resistant strains of certain garden crops. Tenn.

Canning crops. (a) Method of planting. (b) Irrigation of canning peas. Utah.

Observation garden. Development of all year garden in Coastal Plain. (Willard Substation) W.C.

HORTICULTURE--Vegetables and Truck Crops, General. (Cont.)

Vegetable and small fruit studies for the Delta. (Delta Substation) Miss.

Crop survey of the Pleasant Valley onion district. Iowa.

Establishing standard grades on all fruit and vegetables. N.C.

Vegetable growing experiments.--To obtain data on the production of vegetable crops in the Virgin Islands, the varieties best suited to local conditions, the season in which they can be most advantageously planted, and methods of planting and cultivation most profitable under Virgin Islands conditions. Virgin Islands.

Miscellaneous vegetable trials. Ky.

Studies with miscellaneous vegetables in North Jersey. N. J.

Walnuts.

Genetic studies with Juglans regia, including methods of propagation.

A study of eastern varieties and discoverable hybrids. N.C. (A)

Walnut breeding investigations. (Citrus Substation, Riverside) Calif.

The improving of trees, especially the black walnut.--To develop more desirable and hardy strains of trees which are only half hardy. N.Dak.

Propagation of the apple, walnut, and sweet cherry by pretreatment of scion wood in place. Pa.

Walnut and pecan studies. A study of environmental factors with especial attention to top grafting Juglans major with cultivated varieties. Ariz.

Pecan, English walnut, and almond experiment, (a) to ascertain whether New Mexico climatic and soil conditions are suitable for the growing of these nut trees, (b) to study the different methods of preventing winter injury to the trees, and (c) to begin an investigation on originating, if possible, a late-blooming almond. N.Mex.

Walnut grafting investigations. Mo.

Fertilizer trials with walnuts. (Citrus Substation, Tuston and Santa Paula) Calif.

Walnut irrigation, harvesting and curing trial in relation to moldy walnuts. (Citrus Substation, Riverside) Calif.

Sunburning and winterkilling of walnut trees. (Citrus Substation, Riverside) Calif.

Walnut curing. (Riverside Substation) Calif.

HORTICULTURE--Watermelons.

Requirements, varieties, cultural methods, and seed "place effect" of the watermelon and cantaloupe. Mo.

Wilt-resistant watermelons.--To determine whether the Conqueror watermelon developed by the U. S. Department of Agriculture is resistant under Illinois conditions and, if so, whether it is a suitable market melon; also, whether crosses between this variety and standard varieties will result in an improved melon having resistant qualities. Ill.

Winter Injury. (See also specific fruits)

Winter injury of fruit crops. Wash.

A study of the nature, causes, and prevention of winter injury to fruits, with special reference to the apple, including the root system. N.H. (A)

Winter injury investigations.--To determine relative importance of factors in winter injury to roots of fruit trees and cane fruits. Nebr. (A)

Winter injury.--To determine the best procedure in handling trees injured by the severe winter of 1919-20. (Hood River Substation) Oreg.

Effect of low temperature on plants. Physiological factors concerned in frost injury. Minn.

A study of air drainage and spring temperature variations as affecting frost injury to fruit. N.Mex. (A)

The recovery of fruit trees from serious winter injury. N.Y. Cornell.

Yautias.

To learn best varieties and cultural methods for yautias, dasheens, and sweet potatoes for Porto Rico. Porto Rico.

Miscellaneous.

Breeding of horticultural plants, including tomatoes, small fruits, and celery. Utah.

The relative response of gooseberries, currants, red and black raspberries, blackberries, young apple trees and corn, when growing in the same soil, to applications of fertilizers. N.Y. Cornell.

Treatment of greenhouse soil in solid beds. Drainage, freezing and drying. Md.

Greenhouse cropping for one season. Oreg.

HORTICULTURE--Miscellaneous. (Cont.)

Greenhouse investigations.--To determine what greenhouse crops are best grown in North Dakota, the best varieties and how best to grow the crops under North Dakota conditions. N.Dak.

Improvement of greenhouse crops and a study of crop substitution. Chic.

Muck land experiments.--To study the various muck land problems in northern Indiana from a horticultural standpoint, fertilizer treatment for vegetables and melons and variety tests. Ind.

Effect of lime on injury by chemical fertilizers. Pa.

Nursery propagation. (South Haven Substation) Mich.

Plant propagation (nursery).--To survey nursery practices and methods of asexual reproduction. Tex.

Variety tests of drug plants. (Hermiston Substation) Oreg.

Studies in the problems of operation of central fruit-packing houses. N.Y. Cornell.

Horticultural survey of the State. Utah.

Miscellaneous horticultural observations. (Corvallis Substation) Mont.

Miscellaneous horticultural work. W.Va.

Acclimatization tests of imported and other plants. Ca.

Propagation of shrubs. Wis.

Cucurbits for canning. Iowa.

SEEDS

Germination Studies.

Physiology of seed germination. (a) Physiology of dormancy in seeds, (b) effect of seed treatment on germination, (c) respiration studies in seeds. Minn.

Effect of soil treatment on seed germination and the damping off of seedlings in the greenhouse. Study of some compounds of copper. N.Y. Cornell.

Germination tests of vegetable seeds. N.Y. State.

The minimum amount of water necessary for the germination of seeds. N.C.

Studies of the germination of beet seed. N.J.

Studies of the germination of celery seed. N.J.

Study of methods of making germination tests. Mont.

Purity and germination tests of official seed samples. N.Y. State.

Analyses and germination tests of collected (official) samples. Md.

Analyses and germination tests of collected (unofficial) samples. Md.

Production and Distribution.

Experiments in seed production. Idaho.

Pure seed increase fields. Mont.

Pure seed distribution.--To increase and distribute pure seed of the various crops which have been improved. (Aberdeen Substation) Idaho.

Pedigreed seed distribution. (Northwest Substation, Crookston) Minn.

Increase and distribution of seed. Wash.

Production in quantity of carefully selected pedigreed seed of recommended varieties of farm crops. (West Central Substation, Morris) Minn.

To increase and disseminate pure seeds of cereal and forage crops. N. Dak.

Cooperative seed production and distribution. Minn.

SEEDS--Production and Distribution. (Cont.)

Seed and plant distribution.--To encourage more general and more diversified plantings, to provide good seeds and plants which can not be obtained elsewhere on the island, and to pave the way to a more highly developed general agricultural system. Guam.

Miscellaneous.

Seed investigations. Iowa.

Studies of seed control methods and the relation of foreign matter to source. Md.

Seed testing. Minn.

Seed testing for farmers. Conn. State.

Seed testing for users of agricultural seeds. N.Y. State.

The enzymotic and other chemical changes concurrent with loss of viability in seeds. Ky. (A)

Studies in identification of seed of the genus Brassica. Oreg.

Studies on the longevity of grass and clover seeds. N.J.

A study of plant growth and crop production in relation to size and weight of seed. N.J. (A)

Seed certification, including grain and potatoes. Utah.

Influence of form and amount of sulphur on growth and development of seed and of sulphur-loving plants. Wis.

Preliminary tests of different fertilizing substances and mixtures on seeds. Ky.

WEEDS

Eradication and Control.

Weed control. Iowa. Utah.

Weed eradication. (Eureka, Highmore, Cottonwood, and Vivian Substations) S.Dak.

WEEDS--Eradication and Control. (Cont.)

Experiments in the control and eradication of weeds. N.Y. Cornell.

Study of methods of weed eradication. Wis.

Weed control by sprays. Oreg.

Eradication of weeds from seed beds and transplant beds and in forest plantations by chemical sprays. N.Y. Cornell.

Weed control. Clean culture method. Oreg.

Elimination of weeds from lawns and putting greens by physiologically acid top-dressing. R.I.

Cost of weed eradication. Wis.

Studies of weed control. A study of the germination, seeding habits, and development. Minn.

Experiments in the eradication of bindweed. Trials of chemical and tillage methods of eradicating bindweed (Convolvulus arvensis). (Hays Substation) Kans.

To determine a practical method of eradicating Johnson grass. N.Mex.

A survey of the occurrence of the perennial sow thistle, with methods of controlling and eradicating it. Minn.

Studies of weed control. Control of perennial sow thistle. (Northwest Substation, Crookston) Minn.

Studies of weed control. Control of Canada thistle. (Northwest Substation, Crookston) Minn.

Studies of weed control. Control of quack grass. (Northwest Substation, Crookston) Minn.

Miscellaneous

Investigation of the habits of some perennial weeds of New York. N.Y. Cornell.

Studies of weed control. Vitality of Canada thistle. (Northwest Substation, Crookston.) Minn.

Germination of weed seeds. Iowa.

SEEDS--Miscellaneous. (Cont.)

Studies of weed control. Vitality of perennial sow thistle. (North-west Substation, Crookston) Minn.

The preparation and distribution of specimen cases of noxious weed seed. Minn.

FORESTRY

Basket Willows.

Basket willow growing.--To introduce basket willows in Alaska. (Sitka Substation) Alaska.

Willow culture for basket and furniture manufacture. Conn. State.

Forest Management.

Management of native wood lots. Iowa.

Studies in forest regeneration. Management. Minn.

Woodlot management. Pa.

Studies of farm woodlands. Idaho.

Determination of the best systems of management of the several natural and artificial types of native woodlands with respect to (a) regeneration, (b) increasing wood production, (c) improving quality of stand. Ohio.

Thinning of immature stands of white pine to improve the quality and rate of growth. N.H.

Effect of thinning in hard woods. One grade in chestnut oak. Conn. State.

Silvicultural management of wood lots in central and southern New York. N. Y. Cornell.

Silvicultural management of the maple sugar bush. N.Y. Cornell.

Methods of management of species of conifers and hardwoods that survive. Conn. State.

Working plan for Cloquet Forest. Minn.

FORESTRY--Forest Mensuration.

Studies in forest regeneration. Mensuration. Minn.

Studies in forestry yield and volume. Minn.

Rate of growth and possible yield of wood lots. Mich.

Studies on growth and habits of several species of conifers and hardwoods. Conn. State.

Preparation of volume tables for principal California species. Calif.

Volume, growth, and yield studies of Adirondack forest types by permanent sample plats. N.Y. Cornell.

Volume, growth, and yield studies of second growth hardwoods in the Adirondacks. N.Y. Cornell.

Volume, growth, and yield studies of central and southern New York hardwoods. N.Y. Cornell.

Volume, growth, and yield of coniferous plantations. N.Y. Cornell.

Rate of growth, volume, and yield of hardwood trees. Mich.

Forest Nurseries.

Studies in forest regeneration. Nursery practice. Minn.

State forest nursery. Testing of trees and shrubs suitable for windbreaks, timber, or landscape purposes. (Fort Hays Substation) Kans.

Improvements in (forest) nursery practice. Mich.

Propagation of forest trees. Determination of the best methods for the production of forest planting stock. Ohio.

Fertilizing in forest nursery practice. N.Y. Cornell.

Forest nursery studies. Minn.

Production of hardwood nursery stock, and establishment of hardwood plantations. N.Y. Cornell.

Coniferous seed bed study.--To determine (a) the value of fertilizers in seed beds, (b) the value of different amounts of seed, (c) the value of dusts and sprays in preventing damping off. Conn. State.

FORESTRY--Forest Nurseries. (Cont.)

Distribution of planting stock to small holders at reasonable prices.
Conn. State.

Forest Products.

Investigations in forest products. Marketing forest products. Iowa.

Properties and uses of second-growth redwood. Calif.

Reforestation.

Studies in reforestation. (Coastal Plains Substation) Miss.

Studies in forestry regeneration. Sowing and planting. Minn.

Forest reproduction. A study of the underlying principles governing the natural reproduction of forest growth. Vt.

Reforestation. Studies of the rate of growth of tree species. Ohio.

Comparative growth of different kinds of forest trees. (North Central Substation, Grand Rapids) Minn.

Determination of species and mixtures of species adapted for commercial plantations, windbreaks, and shelter belts in different sections of Ohio, and methods of planting and management. Ohio.

The reforesting with useful trees of a tract of 200 acres denuded by charcoal burners, and of 80 acres of hill land formerly devoted to cane, pineapples, and other crops. Porto Rico.

Mahogany and other species forestation work.--to determine the annual rate of growth of mahogany and the distance between trees that gives the best results on low valley lands and hillside lands. Virgin Islands.

Tree Planting.

Forestry plantation. (Northern Montana Substation) Mont.

Forest plantations for commercial purposes. Iowa.

Comparison of a wide variety of conifers and hardwoods. Conn. State.

FORESTRY-- Tree Planting. (Cont.)

Studies of forest plantations. Listing all plantations and taking notes on conditions, success, etc. Conn. State.

Forest plantations.--To determine best species of trees to plant for various purposes and different qualities of soils, and yields that may be expected at various ages from such plantations. Mich.

Experimental forest plantings. Pa.

Forestry experiments.--To determine methods of seeding and rate of growth of various species. S.C.

Forest planting studies. Minn.

The growth of forest plantations. N. H.

Development of stands of Big Tree (Sequoia gigantea). Calif.

Planting experiments in the Berkeley Hills. Calif.

Experimental tree planting. Idaho.

Growth, returns, and uses of planted cottonwood in Iowa. Iowa.

Windbreaks.

Windbreak plantations. (Northeast Demonstration Farm, Duluth) Minn.

Demonstration windbreak plantations. Minn.

Windbreak planting investigations, including degree of success, soil, planting conditions, weather, and cultivation. Minn.

Windbreaks--comparing different methods of planting and subsequent methods of management. (North Central Substation, Grand Rapids) Minn.

Wood Studies.

Studies of Minnesota woods. Minn.

Relative durability of various pines, and of redwood cut from old and second growth. Calif.

Relative durability of Idaho woods. Idaho.

FORESTRY--Wood Studies. (Cont.)

Studies in the decay of wood. Colo.

Determination of moisture content of different woods under various conditions and their adaptability for special purposes. Pa.

Wood collection. Minn.

Miscellaneous.

Hybridization of forest trees. Mich.

Varietal and cultural tests. Kans.

Study of second-growth hardwood on cut-over lands. Mich.

Quantitative and qualitative survey of cut-over lands. Minn.

Methods of thinning stands of redwood second growth.--To determine those methods most conducive to maximum rate of growth and value of product. Calif.

Replacing chestnuts with conifers in a farm woodlot. Conn. State.

Forestry investigations.--To try out forest and ornamental trees to determine their value for shelter belts, post timber, and other uses. (Edgeley Substation) N.Dak.

A study of the growth and yield of various species of Eucalyptus on different sites in California. Calif.

Studies of forest adaptations of important soil types. Conn. State.

A study of tolerance of forest trees. Vt. (A)

Tolerance of trees for alkali. Idaho.

Seed production of white pine in Ithaca regions. N.Y. Cornell.

A survey of the wastes resulting from the logging and milling of California redwood and associated species. Calif.

Methods of killing trees to prevent production of root suckers and stump sprouts. N.Y. Cornell.

Use of poisons to kill trees so as to prevent their sprouting. Mich.

FORESTRY--Miscellaneous. (Cont.)

Forest survey. A survey of the forest areas of the State for the purpose of determining the resources in standing timber, the condition of the woodlands with respect to future yields, lands which should be permanently devoted to forestry, and the area and condition of idle areas within the State. Ohio.

Forest trees of Minnesota. Range and distribution studies. Collection of authentic material of leaves and fruits and preserving same. Minn.

Phenological forestry observations. Pa.

Working plan for Itasca Park. Minn.

Planting to determine spacing and methods of fixing forest trees. Pa.

Agricultural possibilities of logged-off lands. Idaho.

Experiments in artificial reproduction of redwood cut-over land.
(Mendocino) Calif.

Studies of adaptability and rate of growth of trees at Chico Forestry Substation. Calif.

Studies of adaptability and rate of growth of trees at Santa Monica Forestry Substation. Calif.

Quantitative and qualitative forest increment on cutover lands. Calif.

Artificial reproduction of redwood (Sequoia sempervirens). Calif.

Timber survey.--To determine the available lumber supply and present methods of marketing. N.C.

Forest protection studies. Minn.

Studies in forest regeneration. Seed studies. Minn.

Studies in forest regeneration. Forest type. Minn.

Forest insurance. Mich.

Forest taxation. Mich.

Sprout study. Mich.*

Pruning evergreen plantations. Mich.

Effect of grazing on second-growth hardwoods. Mich.

PLANT PATHOLOGY

Alfalfa Diseases.

Pathological and physiological study of the anthracnose fungus (Colletotrichum trifolii) of alfalfa. Miss. (A)

Root diseases of alfalfa.--To determine cause of rotting of alfalfa roots and possible remedy, including prevalence, symptoms, histological studies, physiology of diseased roots, isolation of causal organism and its identification, and proof of pathogenicity. Colo. (A)

Alfalfa wilt. Iowa.

Apple diseases.

Apple diseases. Me. N.Y. State.

Control of apple diseases in Arkansas. Ark.

Apple leaf diseases.--To determine manner of overwintering, time and condition of infection, and methods of control of apple leaf spot and scab. W.Va.

Apple root diseases. Cause and control. N.Y. Cornell.

Anthracnose control (of apple). A study of the persistence and efficacy of the spring Bordeaux-oil spray, Bordeaux in the delayed dormant summer and fall applications, and various proprietary Bordeaux mixtures. (Hood River Substation) Oreg.

Black root rot of the apple. A study of symptoms, etiology, transmission, and control of this disease. Va. (A)

A study of root rot of apples. Del.

Studies in the black rot of apples. Pa.

Study of apple black rot control and the dusting schedule. Mass.

Apple blotch. Okla.

Studies of apple blotch. Pa.

PIANT PATHOLOGY--Apple Diseases. (Cont.)

Apple blotch investigations.--To determine the effect of dormant sprays upon the apple blotch fungus within the cankers and upon the subsequent development of the disease on fruit and young wood. Ind.

Apple blotch control.--To determine the effect of dormant sprays in apple blotch control. Ind.

Fire blight of pear and apple. Infection experiments, study of disinfectants, resistant types. N.Y. Cornell.

Treatment of apple canker disease. Testing methods of sterilizing cuts to prevent infection of blister canker and for sterilizing the cut surface of a cleaned canker. Mo.

Investigations for the control of the Illinois blister canker of apple. Iowa.

Apple blister canker control.--To test cutting out of cankers and orchard sanitation as a practical method of control of apple blister canker. Ill.

Crown gall of the apple. Iowa.

Apple flyspecks. A study of the morphology and taxonomy of the causal organism. N.Y. Cornell.

Apple fruit-spot diseases. N.Y. State.

Baldwin fruit-spot investigations. Mich.

Apple measles. N.Mex. (A)

Apple rust. Pa.

Apple rust. Detailed study of the life history of the fungus or fungi causing apple rust in West Virginia. W.Va. (A)

Studies of apple scab. Del.

The control of apple scab. N.H.

Apple scab and its control. Wis.

A study of certain phases of the life history of apple scab. N.Y. Cornell.

PLANT PATHOLOGY--Apple Diseases. (Cont.)

Spraying and dusting experiment for the control of apple scab. Pa.

Apple scab. The behavior of the disease and a critical study of the spraying program necessary for its control. Va.

Apple spraying experiments.--To determine the effect of various spray combinations on apple scab and set of fruit. Ill.

Apple spraying experiments.--To determine the effect of various spray combinations on control of scab, blotch, and bitter rot, and upon the set of fruit. Ill.

Experimental apple spraying.--To determine the comparative value of Bordeaux mixture, commercial lime sulphur and sulphur dust in controlling apple scab and other diseases of the apple. Minn.

Dusting v. Spraying.--To determine the efficiency of dust methods of control of insects and fungus diseases of the apple. Ind.

Comparison of dusting and spraying for the control of insects and diseases on the apple. W.Va.

Apricot Diseases.

A study of apricot bacterial gummosis and its control. Calif.

Brown rot of apricot. (Mountain View Substation) Calif.

Avocado Diseases.

Fruit spotting of avocados. Fla. (A)

Avocado scab. Fla. (A)

Banana Diseases.

The control of banana wilt.--To control banana wilt. Porto Rico.

Barley Diseases. (See Cereal Diseases, General)

PLANT PATHOLOGY--Bean Diseases.

The bacterial blight of the bean. The effect of environmental factors on the disease, the nature of the causal organism, and the production of disease-resistant stock. N.Y. Cornell.

A bacterial disease of beans new to New York State. N.Y. Cornell.

Bean bacteriosis and anthracnose. The relative susceptibility of varieties. Minn.

The dry rot of the bean: (a) Nature and cause of the disease. (b) Effect of soil environment. N.Y. Cornell.

Dry root rot of beans caused by *Fusarium* sp. Va. (A)

The nature and control of Michigan bean diseases, including (a) a study of bean mosaic, and (b) a study of resistance of various bean varieties to anthracnose and mosaic. Mich.

Mosaic disease of beans and other legumes--nature, cause, control. N.Y. Cornell.

Bean rust. Va. (A)

Bean rust.--To determine whether the rust of beans (*Uromyces appendiculatus*) can be carried from one crop to the next through seed. Ind. (A)

Biologic specialization of parasitic fungi in relation to disease resistance in plants. Susceptibility of several varieties of beans to the different strains of anthracnose and rust of the bean. Colo. (A)

Study of yeast disease of the bean (*Vicia faba*)--life history studies. N.Y. Cornell.

Yeast-spot of lima beans. Va. (A)

The characteristics and the control of certain lima bean diseases. Pa.

Hereditary abnormalities of beans mistaken for diseases. N.Y. Cornell.

Blackberry Diseases.

To determine the facts with reference to the life history and pathology of the orange rust of blackberries and raspberries. Ind. (A)

PLANT PATHOLOGY--Botrytis Diseases.

Studies on Botrytis and Sclerotinia diseases of plants, including Botrytis diseases of peony, Botrytis blight of golden seal. N.Y. Cornell.

Cabbage Diseases.

Cabbage disease investigations.--To determine the relative economic importance of the various cabbage diseases in the market garden and kraut crops of cabbage in Indiana, with particular reference to yellows, club root, blackleg, black root, and early blight. Ind.

Blackleg of cabbage caused by Phoma. Pa.

Club root of cabbage. Pa.

Study of the control of club root. Pa.

Experiments with Rhizoctonia of potato, club root of cabbage, and onion smut. N.Y. Cornell.

Cabbage breeding for the control of yellows. Iowa.

Cabbage diseases of Wisconsin and their control, including yellows, black rot, blackleg, and club root. Wis. (A)

Canker, European.

European canker. Life history and control measures. Oreg. (A)

Carrot Diseases.

Investigation of carrot blight. Etiological, pathological, symptomatic, and therapeutical studies of the disease, with morphological, physiological, and taxonomic studies of the pathogene. Mass. (A)

Carrot diseases on Long Island. N.Y. State.

Cauliflower Diseases.

Cauliflower diseases on Long Island. N.Y. State.

PLANT PATHOLOGY--Celery Diseases.

The control of celery blight with sprays and dusts. Conn. State.

Relation of the health of the host plant to infection by leaf-spot fungi, with special reference to *Septoria* leaf-spots of celery and tomato. N.Y. Cornell.

Investigations relating to celery diseases. (a) *Septoria apii* as a pathogene. (b) *Fusarium* stunting of celery. Mich.

Fusarium root rot of celery. Ohio.

Seed bed diseases of celery. Fla. (A)

Cereal Diseases, General. (See also specific grain diseases.)

Investigations of cereal diseases. N.J.

Disease investigations with cereals and forage crops. Iowa.

Cereal disease investigations.--To learn what varieties are resistant to disease in order to breed disease-resistant strains. (Dickinson Substation) N. Dak.

Bacterial diseases of grain, grasses, and soy beans, and their control. Wis.

Ergot of cereals. The relation between the disease on wild grasses and on rye and other cereals. Seed treatments. Minn.

Investigations on grain rust. Wis.

Epidemiology of cereal rusts. Minn. (A)

Biologic specialization in cereal rusts. Minn. (A)

Agronomic studies of rusts of cereals. (a) Devising remedial treatments for soil, seed, and plants. (b) Breeding resistant varieties. (Davis Substation) Calif.

Life cycle studies.--To determine the facts with reference to the sequence of spore forms in certain autoecious rusts. Ind. (A)

Miscellaneous rust investigations.--To increase our knowledge of plant rusts through studies of their life history, morphology, cytology, physiology, and taxonomy, with special reference to those phases of the subject that will contribute to a better understanding of the general biology, phylogeny, and pathology of the group. Ind. (A)

PLANT PATHOLOGY--Cereal Diseases, General. (Cont.)

Rust investigations.--To bring together in form for publication the manuscript of all the species of rust occurring in North America, including Central America, the Canal Zone, and the West Indies, which have not been previously published in the "North American Flora," Ind. (A)

Cereal leaf rust disease investigations.--To determine with reference to leaf rusts of wheat, barley, and rye, their life history, fixity to hosts, biological forms if any, and the relation of these to forms found on other related wild or cultivated grasses, the factors involved in their dissemination, virulence on different varieties, a study of physiological and ecological factors in relation to host and parasite, and an investigation of the possibilities of control through the development and by the selection of breeding of disease-resistant varieties or strains. Ind. (A)

Study of environmental conditions influencing the development of stem rust in the absence of an alternate host (barberry). Nebr. (A)

Investigation of stripe rust of grains and grasses caused by Puccinia glumarum. Idaho.

A study of rust resistance in small grains. S.C.

The nature of resistance of cereals to rust. The biochemistry of the resistance of wheat to stem rust. Minn. (A)

Studies of the behavior of and control methods for wheat rust, wheat, oats, and sorghum smuts; and corn smut and root rots. Kans.

Rust and smut control in wheat and other cereals and grasses.--To investigate the life histories and characteristics of the rusts and smuts of cereal grains and grasses, to determine their chief modes of attack, the conditions under which they are most destructive, and to establish proper methods of control. N.Dak.

Agronomic studies of smuts on cereals. (a) Devising remedial treatments for soil, seed, and plants. (b) Breeding resistant varieties. (Davis Substation) Calif.

Smut treatment. (Northwest Substation, Crookston) Minn.

Smut treatments. The effect of different methods of treatment on the development of covered smuts. Minn.

PLANT PATHOLOGY--Cereal Diseases, General (Cont.)

The foot rot of wheat and other cereals. Wash. (A)

Imperfects on cereals and root, mainly on the host range of Helminthosporium, causing a serious root and foot rot of wheat, barley and rye, to determine the conditions under which the disease develops. Minn.

Investigations in pathology and control of root and seed infecting diseases, particularly of flax, cereals, and small grains.--To establish the relationship of root and seed infecting diseases of small grains and farm crops of North Dakota, particularly of flax, cereals, and grasses, to methods of cropping, to determine means of control and to prevent accumulation in the seed and in the soil. N.Dak.

Barberry eradication. Minn. (A)

Cherry Diseases.

A bacterial disease of the Wragg cherry. Colo.

Leaf-spot of cherry and plum, and its control. Wis.

Chlorosis.

Chlorosis troubles.--To ascertain the best method of restoring the usual green color of trees and vines affected with chlorosis. N.Mex.

Soil conditions accompanying chlorosis troubles. R.I.

Relation of carbohydrates to chlorosis. N.Y. Cornell.

Citrus Diseases.

Anthrachnose of citrus fruits. Fla. (A)

Citrus blast. (Citrus Substation, Riverside) Calif.

Citrus blight. Distribution, cause, and control. Fla.

Citrus canker. Growth characters of organism. Fla. (A)

PLANT PATHOLOGY--Citrus Diseases. (Cont.)

Citrus canker. Length of life of the organism in the soil and on old hosts; methods of distribution; control methods. Fla.

Soil and nutrition studies with reference to dieback of citrus. Fla. (A)

Gum diseases of citrus. (Citrus Substation, Riverside) Calif.

Gumming of citrus. Fla. (A)

Melanose and stem-end rot of citrus. Fla. (A)

Citrus scab. Spraying experiments to determine the proper time for spraying and the best sprays for the control of the disease. Fla.

Observations and studies on internal decline of lemons. (Citrus Substation, Riverside) Calif.

Citrus fruit-spots, stains, and rots. (Citrus Substation, Riverside) Calif.

Routine examination of material sent to the Citrus Substation, and minor studies in mycology and bacteriology. (Citrus Substation, Riverside) Calif.

Clover Diseases.

The study of corn root rot and Fusarium root rot of clover. Ohio. (A)

Investigation of the eelworm disease of clover. Idaho.

Coconut Diseases.

Coconut bud rot.--To determine the causal organism of coconut bud rot and to eradicate the disease. Porto Rico.

Corn Diseases.

Corn disease investigations.--To assist and promote investigations on certain corn crop losses and the diseases responsible therefor.--To determine the facts relative to the distribution of these diseases.--To develop and test control methods and to breed disease-resistant strains and varieties. Ind.

PIANT PATHOLOGY--Corn Diseases. (Cont.)

A bacterial disease of corn. A study of the causes of rotting of corn stalks due to a bacterium. Ark. (A)

Dry rot of corn. Iowa.

Corn ear rots and their effect on the constituents of affected ears and their progeny. S.Dak. (A)

Root, stalk, and ear rots of corn. Pa.

Investigation of the etiology, pathogenesis, and saprogenesis of the organism causing rot of the root, stalk, and ear of corn and its allies, and a study of the pathological histology of the hosts. Ind. (A)

Root and stem rots of corn.--To study the organisms found on and in corn kernels, and their effect upon germination and yield. Ia. (A)

A study of corn root diseases. S. C.

Corn root rot. Miss.

Corn root rot.--To determine the causes and to select strains resistant to the disease. Md.

Corn root rot--its relation to wheat scab. Wis.

The study of corn root rot and Fusarium root rot of clover. Ohio. (A)

The influence of time of planting upon scutellum, diplodia, and Fusarium rots of corn. Ill.

To determine the comparative severity of scutellum, diplodia, and Fusarium rots of corn. Ill.

Effect of seed treatment upon the control of corn rot diseases.--To determine the value of treating seed corn with chemicals to control rots which attack corn. Ill.

The value of certain rotations in control of corn rot diseases. Ill.

A study of the "frenching" disease of corn. Ky.

Corn smut. Iowa.

PLANT PATHOLOGY--Cotton Diseases.

A study of cotton anthracnose. S. C. (A)

A study of anthracnose resistance in cotton. Miss. (A)

A study of the bacterial diseases of cotton. S. C. (A)

Effect of alkali on the resistance of Egyptian cotton to black arm and angular leaf spot. Ariz. (A)

Effect of alkali on the resistance of Egyptian cotton to Ozonium omnium (Texas root rot). Ariz. (A)

A study of biological strains of cotton wilt fungus and means of its dissemination. Ark. (A)

A study of miscellaneous cotton diseases. S.C.

Cowpea Diseases.

Diseases of the soy bean and cow pea, with special reference to a bacterial blight, a wilt, and a mosaic. Del. (A)

Cranberry Diseases.

Cranberry disease work. Mass.

Crown Gall.

Crown gall. Ohio.

Crown gall investigations. Iowa.

Crown gall and its control. Wis.

The prevention of crown gall. (Jackson and Winchester Substations) Tenn. (A)

A study of the comparative infectiousness of the crown gall organism (Bacterium tumefaciens), with special reference to finding resistant forms of Prunus suitable as a root stock for the various stone fruits. (Riverside Substation) Calif.

PLANT PATHOLOGY--Cucumber Diseases.

Cucumber diseases and their control. Wis.

Bacterial blight of cucumbers. Fla. (A)

Bacterial diseases of cucumbers known as "angular leaf spot".
Fla. (A)

Studies of the cucumber mildew. Life history of the fungus, methods
of reproduction, wintering, and methods of control. W.Va. (A)

Mosaic disease of cucumbers and other plants. Iowa.

Date Diseases.

Studies of Alternaria, Penicilium, and Aspergillus as date rots.
Ariz. (A)

Dewberry Diseases.

Dewberry anthracnose control. N.C.

Disease Resistance. (See also GENETICS -- Inheritance of characters.)

Biologic specialization of parasitic fungi in relation to disease re-
sistance in plants. Susceptibility of several varieties of beans
to the different strains of anthracnose and rust of the bean. Colo.
(A)

Plant nutrition and its relation to parasitism, involving a study of
the causes and relationship of attack and mode or causes of resis-
tance to attack of parasitic fungi in flax, cereals, and associated
crops. N.Dak. (A)

The nature of disease resistance in plants. Wis.

The biochemistry of disease resistance in plants. Minn. (A)

PLANT PATHOLOGY--Downy Mildew. (Cont.)

Control of downy mildew on cucurbits and other host plants. Fla.

The downy mildew of cucurbits. Fla. (A)

Eggplant Diseases.

Studies on eggplant diseases. N. J.

Seed bed diseases of eggplant. Fla. (A)

Phomopsis of eggplant. Fla. (A)

Fig Diseases.

Fig.diseases. (San Joaquin Valley) Calif.

Flax Diseases.

Investigations in pathology and control of root and seed infecting diseases, particularly of flax, cereals, and small grains.--To establish the relationship of root and seed infecting diseases of small grains and farm crops of North Dakota, particularly of flax, cereals, and grasses, to methods of cropping, to determine means of control and to prevent accumulation in the seed and in the soil. N. Dak.

Studies with flax rust and resistance of strains and varieties. Minn.

Flower Diseases.

China aster diseases. N. Y. State.

Aster blight control.--To determine methods of control for the aster blight and develop resistant strains. Ind.

Study of aster diseases, especially "wilt" and "yellows".--To determine methods of controlling these diseases and selection of resistant strains. Ill.

Investigation of Bermuda lily diseases. Mich.

PLANT PATHOLOGY--Flower Diseases. (Cont.)

Phytophthora bud rot of Bermuda lillies. N.Y. Cornell.

Phytophthora leaf spot of Bryophyllum. N. Y. Cornell.

Red bulb disease of Friesia. Calif.

Corm rots of gladiolus. Life history studies, nature of the rots, control. Investigations of the more important diseases (at least three) of this plant. N. Y. Cornell.

Fusarium wilt of golden seal. Life history study and identification of causal organism, temperature relation, control. N. Y. Cornell.

Studies on Botrytis and Sclerotinia diseases of plants, including Botrytis diseases of peony and Botrytis blight of golden seal. N. Y. Cornell.

Diseases of the rose. An investigation of the more important diseases under glass and out of doors. Life history studies, temperature relations, and control. N. Y. Cornell.

Mildew and black-spot of roses. Life history studies, temperature relations, and control. N. Y. Cornell.

Insects and plant diseases harmful to rose bushes in South Dakota. S. Dak.

Forage Crop Diseases.

Disease investigations with cereals and forage crops. Iowa.

Forest and Shade Tree Diseases.

Tree diseases, including forest and shade trees. Conn. State.

White pine blister rust. Conn. State.

Control of white pine blister rust. Conn. State.

Studies in white pine blister rust control. Minn.

Studies on white pine needle blight. Conn. State.

Blister rust of conifers. Pa.

PLANT PATHOLOGY--Forest and Shade Tree Diseases. (Cont.)

Chestnut blight. Conn. State.

Pruning and spraying in the control of infectious diseases of oak and other shade trees. Ohio.

Insects and plant diseases harmful to ash trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to box elder trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to elm trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to hackberry trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to locust trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to mountain ash trees in South Dakota. S. Dak.

Insects and plant diseases harmful to poplar trees in South Dakota.
S. Dak.

Insects and plant diseases harmful to walnut and butternut trees in South Dakota. S. Dak.

Insects and plant diseases harmful to willow trees in South Dakota.
S. Dak.

Miscellaneous Itasca dendropathological experiments. Minn.

Fruit Diseases.

Brown rot disease of orchard fruits, with special reference to the etiology of the disease. N. Y. Cornell.

The control of sooty mold on fruit by dusting and spraying. N. H.

Studies of fruit rotting sclerotiniae. Md. (A).

PLANT PATHOLOGY--Fruit Tree Diseases.

Orchard disease investigations. N. J.

Fruit tree diseases. A study of so-called "corn sap" winter injury and various forms of gummosis in deciduous fruit trees. Calif.

Fire blight control. (Jackson Substation) Tenn.

Fire blight of pomaceous fruits and its control. Wis.

Pyrenomycetous leaf spots. Ala. (A)

Root diseases of fruit trees. (Hudson Valley Investigations) N.Y. State.

Fruit tree root rot investigations. A study of Armillaria root rot. Oreg.

Fungicides. (See also ECONOMIC ENTOMOLOGY--Insecticides and Fumigants.)

Toxic action of fungicides on parasitic fungi. N. H. (A)

The effect of fungicides and insecticides on plants. N.H. (A)

Reactions between inorganic materials used as insecticides and fungicides when mixed to form combination sprays or dusts. N. Y. State.

New insecticides and fungicides. N. Y. State.

A study of the fundamental factors affecting the suspension, adhesiveness, toxicity, and general efficiency of copper fungicides. Mass. (A)

Investigations with a solution of copper sulphate and ammonium carbonate in water, applied as a fertilizer and fungicide on greenhouse plants. Oreg.

Insecticidal and fungicidal properties of sulphur. N. Y. State.

Furfural fungicide studies. Iowa.

Studies in disinfection with special reference to some organic mercury compounds. N. Y. Cornell.

PLANT PATHOLOGY--Fungicides. (Cont.)

Disinfectants for blight control work. (Talent Substation) Oreg.

Fusarial Diseases.

The Fusarial diseases of plants. Mo. (A)

Fusaria causing wilt in Tennessee. Morphological, cultural and pathological study of the fungi. Tenn. (A)

Gooseberry Diseases.

Spraying gooseberries.--To secure control of gooseberry leaf spot and anthracnose by spraying. Ill.

Grape Diseases.

Grapes. Disease control. Miss.

Studies in grape black rot. Del.

Grass Diseases.

Bacterial diseases of grasses, grains, and soy beans, and their control. Wis.

Investigation of stripe rust of grains and grasses caused by Puccinia glumarum. Idaho.

Rust and smut control in wheat and other cereals and grasses.--To investigate the life histories and characteristics of the rusts and smuts of cereal grains and grasses, to determine their chief modes of attack, the conditions under which they are most destructive, and to establish proper methods of control. N. Dak.

Lettuce Diseases.

Some bacterial diseases of lettuce. N. Y. Cornell.

Seed bed diseases of lettuce. Fla. (A)

Lettuce rot. Ariz.. (A)

PLANT PATHOLOGY--Lettuce Diseases. (Cont.)

Control of bottom-rot of lettuce through selection and breeding. N.Y. Cornell.

Varietal resistance of lettuce to tipburn, N. Y. Cornell.

Study of so-called tipburn of lettuce. Calif.

Study of the nature, cause, and control of lettuce tipburn, particularly with reference to the relation of weather, associated organisms, and fertilizers; also varietal resistance. N. Y. Cornell.

Melon Diseases.

Diseases of cucurbits. Del. (A)

Diseases of cucurbits, especially downy mildew of the canteloupe. Del. (A)

Mosaic Diseases. (See also specific crops.)

The nature and cause of mosaic diseases of plants. Conn. State.

A detailed study of mosaic of plants. Ga. (A)

Transmission of the mosaic diseases.--To determine (a) by what means the mosaics and other allied diseases may be transmitted, and (b) to what extent they can be transferred from one host species to another. N. Y. Cornell.

Mosaic disease of beans and other legumes--nature, cause, and control. N. Y. Cornell.

Mosaic disease of cucumbers and other plants. Iowa.

Muskmelon Diseases.

Investigation of muskmelon diseases. Mich.

Cucurbit disease investigations.--To ascertain the relative economic importance of anthracnose, Fusarium wilt, and blossom end rot of the Indiana watermelon crop, the relative importance of anthracnose, alternaria leaf blight and mosaic in the muskmelon crop of Indiana, and to study methods of control and the efficacy of seed treatment. Ind.

PLANT PATHOLOGY--Muskmelon Diseases. (Cont.)

Muskmelons and blight resistance. Conn. State.

Oat Diseases. (See also Cereal Diseases, General.)

A study of rye and oat anthracnose (Colletotrichum cereale). Miss. (A)

Oat smut. Wash.

Control of loose smut in oats. Ohio.

Oat smut and wheat smut. W. Va.

Onion Diseases.

Onion diseases. Conn. State.

Investigation of onion diseases. Mass.

Onion disease investigations.--To determine which of the onion diseases are limiting factors in the yield and market value of the onion crop of Indiana. Ind.

To determine the nature and seriousness of the onion pink root disease; control measures, including soil treatment and selection for resistance. N. Y. Cornell.

Onion smut control investigations. Oreg.

Studies on the control of onion smut. N. Y. Cornell.

Experiments with Rhizoctonia of potato, club root of cabbage, and onion smut. N. Y. Cornell.

Pea Diseases.

Investigations of pea blight. Wis.

Root rot of peas.--To determine the causes and to select strains resistant to the disease. Md.

Investigations of the root rot of green peas. N. J.

Pea root rot in Delaware and its control. Del. (A)

Rotation of crops with and without legumes as affecting diseases of garden peas. Md.

PIANT PATHOLOGY--Peach Diseases.

Dusting for the control of peach leaf curl. N. Y. Cornell.

Peach spraying experiments.--To determine whether Bordeaux mixture in combination with oil emulsion will control peach leaf curl and whether spraying in the spring is as effective as in the fall. Ill.

A study of the life history and control of brown rot and curculio. Ga.

Diseases of the peach and their control, especially yellows and brown rot. Del. (A)

Peach "yellows". Conn. State.

Pear Diseases.

Pear blight control, with special emphasis on horticultural methods. (Davis Substation) Calif.

Fire blight of pear and apple. Infection experiments, study of disinfectants, resistant types. N.Y. Cornell.

Control of core rot. Oreg.

Pecan Diseases.

Field studies of the diseases affecting the pecan, including control measures. Fla.

Diseases affecting the twigs, branches and stems of young, bearing pecan trees. Fla. (A)

Brown leaf-spot of pecans. Ala.

Pecan scab. Ala.

Pecan scab studies. Miss.

Control of pecan scab by means of sprays. Ala.

Pecan scab and related diseases of the pecan. Tex.

PLANT PATHOLOGY--Pepper Diseases.

The disease of peppers known as "blister" (apparently bacterial).
Fla. (A)

Investigation of fruit rot of peppers. Ga. (A)

Identification and life history and control of organism causing chili
blight. N.Mex. (A)

Persimmon Diseases.

Japanese persimmon disease. Ala.

Plant Disease Surveys.

Plant disease survey. Colo.

A plant disease survey of Connecticut. Conn. State.

Plant disease survey of the State. Del.

Plant disease survey.--To obtain a more definite knowledge of what
diseases are important in this State and to secure data on their
distribution.--To assist in the discovery of new diseases which
may have been lately introduced into the State, and to bring to the
attention of farmers, horticulturists, and others the more important
plant diseases and the widespread losses they may cause, and to
assist in control work. Ind.

General plant disease surveys and investigations, including greenhouse
diseases, truck crop diseases, and diseases of other crops. Mich.

Plant disease survey. Minn. S. C. Utah.

Plant disease survey.--to record annually, through correspondence and
observation, as to prevalence and severity of plant diseases throughout
Oregon. Oreg.

Plant disease survey work. Pa.

Plant disease survey, including blight of cherries, bacterium blight
of raspberries, Fusarium rot of onions, violet Rhizoctonia, and other
new or little known diseases. Wash.

PLANT PATHOLOGY--Plum Diseases.

Leaf-spot of cherry and plum, and its control. Wis.

Experiment plum spraying.--To determine the comparative effectiveness of dust and liquid sprays for the control of brown rot of plums. Minn.

Potato Diseases.

Potato diseases. Wis. Wyo.

Potato investigations. Tuber and leaf diseases. (Northwest Substation, Crookston) Minn.

An investigation of potato diseases which attack the tuber internally, particularly a study of the organisms associated with wilt and stem end rot. N. D. (A)

Virus diseases of potatoes. Oreg. (A)

Potato disease investigations.--To determine which potato diseases are limiting factors in the production and market value of the potato crop in Indiana and to determine the effectiveness of seed disinfection and spraying as a control measure for potato diseases in the State. Ind.

The control of certain soil-born diseases of Irish potatoes.--To develop varieties resistant to the Fusarium "wilt" disease; the relation of certain fertilizers to the control of this disease and of the common scab disease; also, rotation of crops as a control measure and as a means of increasing yield. (Davis Substation) Calif.

To determine the etiology and control of Michigan potato diseases, including seed treatment methods, soil treatment for potato scab, investigations of Bacillus atrosepticus, causing blackleg, and the development of mosaic-and leaf-roll-free strains of potatoes. Mich.

Potato diseases.--To compare tubers produced under vines, sprayed, with those not sprayed the preceding year; to determine the comparative value of different methods of treating tubers for controlling black scurf. Minn.

Control of foliage diseases of the potato by spraying and dusting. N.J.

Potato diseases. A study of insect vectors of potato diseases. Idaho.

Potato disease investigations, including scab, Rhizoctonia, blackleg, mosaic and hopperburn. (Upper Peninsula Substation) Mich.

PLANT PATHOLOGY--Potato Diseases. (Cont.)

Bacterial blight of Solonaceae (Smith's brown rot). Fla. (A)

Seed potato treatment for the control of black scurf. Pa.

Potato investigations. Spraying for early blight. (West Central Substation, Morris) Minn.

Dusting tests.--To compare dusting and spraying for control of late blight and other diseases of the potato. Me.

Fusarium of potato tubers. Mont.

The Fusarium wilt of potatoes. Pa. (A)

Environmental conditions as related to infection and progress of Fusarium wilt and tuber rot of potatoes. Nebr. (A)

A study of leaf roll of the potato in Idaho. Idaho. (A)

A study of marginal leaf roll or spindling tuber disease of potato.-- symptoms, transmission and yields. N. Y. Cornell.

To determine whether leaf roll and mosaic of the potato can be controlled by isolating the seed plat and roguing it thoroughly. N. Y. State.

Communicability of leaf roll of the potato. Pa.

A study of methods for eliminating mosaic and leaf roll from seed potatoes by roguing and indexing. N. Y. Cornell.

Investigations of potato mosaic in Idaho. Idaho. (A)

A study of the heredity of resistance in potatoes to Phytophthora infestans. N. Y. Cornell.

Rhizoctonia disease of potatoes. (Irrigation Substation) Wash.

Studies of Rhizoctonia and mosaic diseases and physiological studies. Utah. (A)

Experiments with Rhizoctonia of potato, club root of cabbage, and onion smut. N. Y. Cornell.

A modified hot formaldehyde treatment for the control of Rhizoctonia of potatoes. Idaho.

PLANT PATHOLOGY--Potato Diseases. (Cont.)

A study of the relation of time, temperature, and concentrations on the killing of the sclerotia of *Rhizoctonia* on potatoes and the killing of potatoes in treatments with mercuric chloridesolutions. N. Y. Cornell.

The potato scab. Vt. (A)

Potato scab control. N.J. Ohio.

The control of potato scab by inoculated sulphur treatment of soils. Idaho.

Potato diseases, including potato wilt and late blight. Fla.

Verticillium wilt of potatoes. Oreg. (A)

The potato wart disease and its control. Pa.

The relation of external conditions to infection and development of the potato wart disease caused by *chrysophlyctis*. N.Y. Cornell.

Spindling sprout disease of the potato tuber. Md. (A)

Tipburn of the potato and other plants. Vt. (A)

Study of yellow dwarf disease of potatoes. N. Y. Cornell.

Degenerative diseases of potatoes. Ohio.

Degeneration diseases of potatoes, their nature and control. Mont. (A)

Degeneration diseases of the potato--identification, transmission, survey, and control, including mild mosaic, crinkle mosaic, rugose mosaic, leaf roll, streak, spindling tuber disease, unmottled curly dwarf, and combinations of these. Me. (A)

Degenerative diseases of potatoes. An attempt to determine the possibility of detecting the presence of mosaic, leaf roll, and other foliage degenerative diseases by the inspection of the seed. Vt.

Potato seed disinfection. Ind.

PLANT PATHOLOGY--Raspberry Diseases.

Raspberry diseases. N. Y. State.

Investigation of raspberry diseases. Mich.

Diseases of small fruits and methods of control--especially raspberry diseases. Minn.

Raspberry anthracnose. Iowa.

Spraying for control of the anthracnose of raspberries (at Peoria). Ill.

Control of crown gall of raspberries.--To determine a practical method of raspberry crown gall through the application of various germicides applied to the soil in the plantation. Ill.

To determine the facts with reference to the life history and pathology of the orange rust of blackberries and raspberries. Ind. (A)

Relation of insects to mosaic disease of raspberries. (Hudson Valley Investigations.) N. Y. State.

Rhubarb Diseases.

A rhubarb disease. Pa.

Rice Diseases.

Control of straighthead or blight of the rice plant. Ark.

A study of the sclerotium disease of rice caused by Sclerotium oryzae Catt. Ark.

Root Knot.

Control of nematode root-knot. Fla. (A)

Root-knot nematode control. Tenn.

Investigation of root-knot nematode and its relation to various host plants. Ga.

PLANT PATHOLOGY--Root Rots.

Root rot investigations. (Hood River Substation) Oreg.

Root rot diseases of New Mexico crops.--To obtain information as to the cause, nature, and control of these diseases. N. Mex.

Texas root rot investigations.--To learn the cause of Texas root rot of cotton, sweet potato, alfalfa, and cowpea. Tex. (A)

Rusts.

Miscellaneous rust investigations.--To determine through field observations and greenhouse and field infection experiments the life history of certain rusts and to contribute to the knowledge of biological forms, and the influence of the host on the morphology of the rust. Ind. (A)

Infection experiments and other studies with rusts. Conn. State.

Dusting for control of cereal rusts. N. Y. Cornell.

Crown rust. Iowa.

The rusts of Connecticut. Conn. State.

Rye Diseases.

A study of rye and oat anthracnose (Colletotrichum Cereale). Miss. (A)

Sclerotinia Diseases.

Studies on Botrytis and Sclerotinia diseases of plants, including Botrytis diseases of peony, Botrytis blight of golden seal. N. Y. Cornell.

Seeds as Disease Carriers, Treatment, etc. (See also diseases of specific crops)

Seed-borne plant diseases. N. Y. State.

Control of seed-borne infections. Effect of various treatments on the viability of seed. N. C. (A)

PLANT PATHOLOGY--Seeds as Disease Carriers, Treatment, etc. (Cont.)

Diseases of seeds.--To find diseases that are carried in the seed and means of disinfecting seed carrying parasitic diseases, and to study the trouble due to immaturity. Md.

The influence of environmental conditions on the transmission and development of seed-borne diseases, including the potato. Nebr. (A)

Small Fruits, Diseases of.

Diseases of small fruits and methods of control--especially raspberry diseases. Minn.

Miscellaneous diseases of brambles. Oreg.

Cane fruit disease investigations, with special reference to anthracnose and crown gall. Wis.

A study of mosaic of brambles. Oreg. (A)

Virus diseases of bramble fruits. Oreg. (A)

Soy Bean Diseases.

Diseases of the soy bean and cowpea with special reference to a bacterial blight, a wilt and a mosaic. Del. (A)

A bacterial disease of soy beans. A study of a little known bacterial disease of soy beans with special reference to cause, symptoms, dissemination, cultural and inoculation studies, relation to leaf-spot of velvet beans and other legumes, and means of prevention and control. N. C. (A)

Bacterial diseases of soy beans, grasses, and grain, and their control. Wis.

Spinach Diseases.

Spinach diseases. Tex.

Strawberry Diseases.

Strawberry leaf-spot or "rust". Tenn.

Strawberries--Control of leaf-spot by spraying. Miss.

Strawberry leaf scorch. Life history, isolation, culture, pathogenicity, and causal organism. N. C. (A)

PLANT PATHOLOGY--Strawberry Diseases. (Cont.)

Strawberry root rot--prevalence, cause, control. W. I. Cornell.

Strawberry diseases in San Francisco Bay region and central coast counties. Calif.

Sugar Beet Diseases.

Sugar beet investigations. The control of black-root. Mich.

The entomology and parasitology of curly leaf of sugar beets. A study of the internal anatomy and histology of non-virulent and virulent leaf-hoppers. Calif. (A)

Sugar Cane Diseases.

A study of sugar cane mosaic, root rot, and other important cane diseases, as to their life history, dissemination, and possible methods of control, including immunity studies with mosaic. La. (A)

Sunflower Diseases.

Sunflower rust. The influence of fertilizers on the development of sunflower rust and the amount of resultant injury. Minn.

An investigation of a disease of cultivated sunflowers known as sunflower wilt. Mont. (A)

Sweet Corn Diseases.

Control of root rot and improvement of sweet corn by seed selection. Conn. State.

Sweet Potato Diseases.

Sweet potato diseases. Miss.

Sweet potato disease control studies. N. J.

Disease resistance in sweet potatoes to stem rot and black rot. Ala. (A)

Sweet potato black rot. Ala.

PIANT PATHOLOGY--Sweet Potato Diseases. (Cont.)

Mosaic of sweet potatoes. Ark.

Diseases of the sweet potato and their control, especially "pox".
Del. (A)

Tobacco Diseases.

Field and laboratory studies of tobacco diseases. (Tobacco Substation)
Fla.

A study of a new root disease of tobacco. Its distribution, identification, and pathogenicity of the causal organism. Varietal resistance.
Ky. (A)

A study of leaf-spot diseases of tobacco. Wis.

The sources of infection of tobacco plant beds with the bacterial leaf-spot diseases. Ky. (A)

Tobacco investigations. The nature of the cause of mosaic disease.
Wis.

Investigations of "must" of tobacco. Wis.

Tobacco diseases, especially black and red root rot and other fungus diseases. Conn. State.

Effect of manuring and continuous cropping without manure on root rot of tobacco. Ky.

A study of tobacco root rot in Georgia. Ga. (A)

Studies of Thielavia basicola, causing tobacco root rot. A study of the perfect stage. Conn. State.

Investigations of the root rot disease caused by Thielavia. (a) Development of Wisconsin strains of tobacco resistant to root rot, (b) development of root-rot-resistant White Burley tobacco for Kentucky and other districts, (c) relation of rotation of host plants and non-host plants to the severity of the Thielavia root rot disease of tobacco, and (d) inheritance of disease resistance in tobacco to the root rot disease caused by Thielavia. Wis.

Investigations of the Fusarium root rot of tobacco. Wis.

Investigation of the "shed burn" of tobacco. (Wis.)

PLANT PATHOLOGY--Tobacco Diseases. (Cont.)

Wildfire disease of tobacco. Wis.

Tobacco wildfire and frenching. N. C. (A)

Blackfire and wildfire diseases of tobacco. (Chatham Substation) Va.

Investigation of the Fusarium wilt of tobacco. Wis.

Tobacco disease survey of the United States. Wis.

Tomato Diseases.

Studies on tomato diseases. N. J.

Tomato diseases. Tex. W. Va.

Tomato disease investigations. Miss.

Tomato disease investigations.--To determine (a) which tomato diseases, other than the Fusarium wilt and the Septoria leaf-spot, are limiting factors in the production and market value of the tomato crop in Indiana, (b) whether or not certain disease-producing fungi, especially the form causing Septoria leaf-spot, are carried with the seed, (c) the source of the primary infection of Septoria leaf-spot--whether due to infestation of seed, seed bed and hotbed, or field soil, with special reference to origin of the disease in the field or spread from neighboring fields (diseased or contaminated transplants, overwintering of fungus in the field, or spread from neighboring fields), the mode of spread of Septoria leaf-spot in the field (rainwater, surface drainage water, wind, cultural practices) and the possibility of control of Septoria leaf-spot. Ind.

Tomato bacterial spot or canker. Ind.

Tomato blight and related diseases. Wash. (A)

Control of leaf blight of tomato.--To devise practical methods for controlling Septoria leaf blight of tomato under field conditions. Md. (A)

Experiments in the control of the western yellow tomato blight by breeding and selection. Idaho.

PLANT PATHOLOGY--Tomato Diseases. (Cont.)

Winter blight of tomatoes. Pa.

Control of tomato leaf-spot. Del.

Control of Septoria leaf-spot of the tomato. Ind.

Relation of the health of the host plant to infection by leaf-spot fungi, with special reference to Septoria leaf-spots of celery and tomato. N. Y. Cornell.

Tomato mosaic control. Ind.

Canning crop diseases, especially Rhizoctonia on the tomato, and methods for its control. Diseases occurring in hotbeds with methods for their treatment. Utah.

Soft rot of the tomato. Va.

Tomato wilt. Testing of varieties as to their resistance, and the breeding and selection for wilt resistance; also, the effect of environment and other factors on the severity of the wilt disease. La. (A)

Studies on tomato wilt caused by Fusarium lycopersici Sacc. N.Y. Cornell.

The Fusarium wilt of tomatoes. Method of infection, factors governing infection, and relation of cell structure of host to resistance; also, to develop resistant varieties of tomatoes. Ga. (A)

Fusarium-wilt-resistant tomatoes.--To secure strains of canning tomatoes that will yield well on land infected with the wilt fungus prevalent in Maryland. Md.

Seed bed diseases of tomatoes. Fla. (A)

Vanilla Diseases.

The vanilla root disease.--To isolate the causal organism and investigate the various methods to control the root disease of vanilla. Porto Rico.

Vegetable Diseases, General.

Diseases of greenhouse vegetables. Ohio.

Miscellaneous truck crop diseases. Field observations on various crop diseases. Minn.

PLANT PATHOLOGY--Vegetable Diseases, General. (Cont.)

Vegetable diseases in Porto Rico. Control of various diseases of vegetable and truck crops, with special reference to leaf-spots caused by fungi of the genera *Cercospora* and *Helminthosporium*. Porto Rico.

Bacterial blight of vegetables. Fla. (A)

Studies of diseases of certain truck crops caused by *Sclerotinia* and *Botrytis*. Pa.

Walnut Diseases.

Walnut crown rot. An investigation of its cause and the factors influencing its occurrence. (Citrus Substation, Riverside) Calif.

The peculiar troubles developed in connection with walnut cultures, involving a discoloration of the leaves. (Citrus Substation, Riverside Kearney Park) Calif.

Watermelon Diseases.

Diseases of the watermelon and their control.--To determine (a) the cause of blighting and its relationship with anthracnose, (b) the cause of blossom end rot, the life history of *Colletotrychum lagenarium* and other organisms, and (c) the pathology, morphology, physiology and cytology of affected plants. Tex. (A)

Cucurbit disease investigations.--To ascertain the relative economic importance of anthracnose, *Fusarium* wilt, and blossom-end rot of the Indiana watermelon crop, the relative importance of anthracnose, *alternaria*, leaf blight, and mosaic in the muskmelon crop of Indiana, and to study methods of control and the efficacy of seed treatment. Ind.

Wheat Diseases. (See also Cereal Diseases, General)

Study of certain wheat diseases as related to the deterioration of wheat and the reduction in yield. Tenn. (A)

An investigation on seed and seedling diseases of wheat, particularly as associated with *Fusarial* and *Helminthosporial* blights. N. Dak. (A)

PLANT PATHOLOGY--Wheat Diseases. (Cont.)

The foot rot of wheat and other cereals. Wash. (A)

Black stem rust of wheat. Va. (A)

An experiment with rusted Marquis wheat harvested at different stages.--
To determine the effect of harvesting rusted grain before maturity.
(Dickinson Substation) N. Dak.

Studies of rust resistance in wheat. S. D.

Corn root rot--its control and relation to wheat scab. Wis.

To determine the resistance of wheat varieties to scab. Minn.

Loose smut of wheat. Va. (A)

Resistant varieties and environmental factors influencing the severity
and amount of loose smut in wheat. N. Y. Cornell.

Oat smut and wheat smut. W. Va.

Wheat smut. Methods of control. Seed treatment.--To determine the
cause of and possible methods of controlling various forms of smut
explosions and the possibility of catching and destroying a large
percentage of the smut at the threshing machine in an effort to
reduce the amount of soil contamination. Wash.

Smut nursery. Smut-resistant winter wheats in uniform nursery. (Burns
Substation) Oreg.

The relation of soil moisture content to bunt or stinking smut infection
in wheat. Idaho. (A)

Control of stinking smut of wheat. Mich.

Tests of various chemical dusts for control of bunt on wheat. Idaho.

Copper carbonate dust for bunt control. Calif.

Control of take-all of wheat. N. C.

Hot water treatment of wheat.--To determine the effect of hot water
treatment of seed wheat on yield, on the seed-borne diseases of
wheat other than loose smut, and as a possible stimulant inde-
pendent of disease control. Ind.

PLANT PATHOLOGY--Wheat Diseases. (Cont.)

Yellowberry in wheat. The cause of yellowberry in Turkey Red wheat in the Columbia Basin and means for its control. Oreg.

Miscellaneous.

The relation of air and soil conditions to infection and progress of certain plant diseases. Wis.

Study of soil temperature and climatic conditions and their relation to the prevalence of important plant diseases in Texas. Tex. (A)

Relation of soil temperature to soil parasites and other organisms, including cabbage yellows, flax wilt, tomato wilt, potato Rhizoctonia, legume tubercles. Wis. (A)

Miscellaneous diseases of trees and crops. Iowa.

Miscellaneous plant disease investigation. Miscellaneous plant diseases. Kans.

Miscellaneous pathological investigations. Oreg.

Miscellaneous plant pathology studies. Ariz.

Miscellaneous plant pathology work. W. Va.

Diseases of perishable crops in transit and methods of control. Tex.

Minor investigations in plant pathology. Routine diagnosis from specimens and answers to inquiries. Calif.

Notes on New York plant diseases. N. Y. State.

Record of materials sent in. (Plant pathology) Calif.

Administration and direction of work of the office, laboratories, and field. N. Dak.

ECONOMIC ZOOLOGY

(See also VETERINARY MEDICINE--Parasites; ECONOMIC ENTOMOLOGY--Lites, Red Spiders, and Ticks.)

Birds.

Life histories of birds of eastern North America. N. Y. Cornell.

ECONOMIC ZOOLOGY--Birds. (Cont.)

The food habits of birds in relation to gardens. Linn.

An ecological study of the birds of a Porto Rican lagoon. N. Y. Cornell.

The migration of birds. N. Y. Cornell.

Methods of attracting birds. N. Y. Cornell.

An ecological study of the ruffed grouse. N. Y. Cornell.

The artificial propagation of the canvasback, the wood duck, the pin tail and teal, the bobwhite and California quail, the golden and Amherst pheasants, the ruffed grouse and other ornamental water fowl, and game birds. N. Y. Cornell.

Investigation and control of injurious insects, mammals, and birds. Nehr.

Bird banding. Mich.

The banding of birds and bats. N. Y. Cornell.

Crawfish.

A systematic and biologic study of the crawfish of Mississippi, with special reference to species injurious to agriculture and means of controlling them. Miss. (A)

Fish.

Pond fertilization for the production of fish food. N. Y. Cornell.

Cultural methods for the commercial propagation of catfish. N. Y. Cornell.

Studies on the nutrition of trout. N. Y. Cornell.

Selective breeding for disease resistance in brook trout. N. Y. Cornell.

Gyrodactyliasis of trout and its control. N. Y. Cornell.

Nematodes. (See PLANT PATHOLOGY--Root Knot.)

ECONOMIC ZOOLOGY--Oysters.

Scientific oyster preparation--(a) studies on the distribution and behavior of oyster larvae, (b) studies on the food of oysters, and (c) investigations of the biology and means of control of oyster drills. N.J.

Studies of the chemical and biological changes occurring in oysters during floating. N. J.

Rodents and Other Mammals.

Rodent investigations. A study of the distribution, biology, injury, and means of control of the more important rodent pests of Nebraska, including house rats and mice, pocket gophers, prairie dogs, ground squirrels and kangaroo rats. Nebr.

Life history of certain rodents and their effect upon grazing ranges, with special reference to the jack rabbit (Lepus alleni and L. californicus) and the small ground squirrel (Citellus tereticaudus). Ariz. (A)

Injurious mammal investigations. Life histories of and control measures for injurious mammals, especially the mole and pocket gopher. Kans.

Campaign against injurious field rodents. Work against the pocket gopher. Minn.

Miscellaneous.

Iowa snakes, their identification, distribution, habits, and relation to agriculture. Iowa.

The frogs of Minnesota. Minn.

The biology of marine borers. (a) Study of the spawning of marine borers and the behavior of their larvae. (b) Studies of the influence of various types of wood upon shell character of Teredo. (c) Parasites and biological enemies of marine borers. N. J.

Biological survey.--To make a survey of and collect biological and economic data upon native and introduced plants and animals of the State, their distribution, habits, and agricultural importance. N. Dak.

ECONOMIC ZOOLOGY--Miscellaneous. (Cont.)

The zoological geography of Washington, including service work. Wash.

Poisonous arthropods. Ark.

Studies in arthropod parasites of man and domestic animals and their relation to disease dissemination. N. Y. Cornell.

ECONOMIC ENTOMOLOGY

Alfalfa Insects. (See also specific insects and Field Crop Insects)

Insects injurious to alfalfa. Study of various hay worms and of the pea aphid. Kans.

Insects injurious to alfalfa. Life history and diffusion of the alfalfa weevil (Hypera postica) and introduction and spread of the parasite Bathyrhynchus curculionis. Nev.

Alfalfa weevil. Study of climatic conditions affecting control. Experiments in control. Breeding and liberation of parasites. Idaho.

Alfalfa nematode control. Rotations, resistant crops and varieties. (Hermiston Substation) Oreg.

Ants.

Ants of Colorado in their relation to plant lice. Colo.

Aphids. (See also insects of specific plants.)

Plant louse investigations. Okla. (A)

Study of aphids. Ohio.

Investigations on plant lice. Colo. (A)

Orchard insects--(a) plant lice, and (b) the apple maggot. Minn.

Ecological and life history studies of aphididae, with special reference to the alternate food plants of migratory species. Mo. (A)

ECONOMIC ENTOMOLOGY--Aphids. (Cont.)

Ant-aphid study to determine the factors which influence the formation of wings. Tex. (A)

The woolly aphis. Tenn. (A)

A new citrus aphid. Study of its identity, nativity, life history, host plants and control. Fla. (A)

The cotton aphis. Ia. Okla. (A)

The biology and control of the currant aphid (Myzus ribis). N. Y. Cornell.

The sugar beet louse. Mont.

Laundry soap in water as remedy for aphids.--To determine strengths at which this is fatal to aphids without injury to plants, as a simple remedy for use in gardens and other small areas where few plants are involved. N. C.

Ants of Colorado and their relation to plant lice. Colo.

Apple Insects. (See also specific insects.)

Studies on apple insects. N. Y. State.

Ecological investigations of apple insects. N. Y. State.

An investigation of aphids injurious to apples--(a) field spray tests, and (b) the biology and habits of aphids as influenced by atmospheric conditions and their effect on prevalence and activities. A study of host relationship. Oreg.

Control of apple aphids. W. Va.

Control of apple red bugs and aphids by dusting. N. Y. State.

Control of apple and peach tree borers. W. Va.

Round headed apple borer. N. Y. State.

Rose leaf hopper as an apple pest. N. Y. State.

ECONOMIC ENTOMOLOGY--Apple Insects. (Cont.)

A study of the leaf rollers injurious to the fruit and foliage of the apple in Pennsylvania. Pa.

Leaf rollers and fruit worms of apple and pear. Study of species and tests of different sprays and time of spraying for control. Oreg.

Two apple leaf miners--Ornix geminatella packard and Tischeria malifoliella clemens. Iowa.

Bionomics and control of the apple leaf skeletonizer (Canarsia hammondi) and the bearing of the data obtained on other related species. Md. (A)

The codling moth, lesser apple worm, and other related apple worms.--To determine relative normal abundance and responsibility for fruit injury of various species of fruit worms in different parts of the State and to secure accurate and definite data on the comparative life and seasonal history of the various species correlated with weather and the relation of the above data to the control of the various species. Ind.

The lesser apple worm. Determination of local distribution and the factors governing it and study of the feeding habits of the larvae, together with the wild hosts of the species. Ark. (A)

Bionomics and control of the apple maggot, Rhagoletis pomonella Walsh. Iowa.

Orchard insects--(a) plant lice, and (b) the apple maggot. Minn.

Orchard spraying for control of the apple maggot. Minn.

The life history, habits, and control of the plum curculio on the apple. Conn. State.

Blister mite control on apples and pears. Observations on life history and habits. Time of application and various combinations and strengths of insecticides for its control. (Hood River Substation) Oreg.

Dusting v. spraying.--To determine the efficiency of dust methods of control of insects and fungus diseases of the apple. Ind.

Comparison of dusting and spraying for the control of insects and diseases on the apple. W. Va.

ECONOMIC ENTOMOLOGY--Army Worms.

Army worms--Cirphis unipuncta and Laphygma frugiperda--life history, habits, natural enemies, food plants, and control measures. N. C.

Bean Insects. (See also specific insects and Truck Crop Insects.)

Insect pests of beans. Calif.

Studies of the bean jasad Empoasca mali. Fla. (A)

Mexican bean leaf beetle (Epilachna corrupta) spread, life history, habits, food preferences, natural enemies, control. N. C.

The Mexican bean beetle. A study of new insecticides for its control. Tenn.

Methods of controlling the Mexican bean beetle. S. C.

Belted bean beetle.--To study the life history of the belted bean beetle Diaboetica baltata LeComte, and to develop methods of control, including feeding habits, character of injury produced, effect of climate, disposition, and natural and artificial control. Ala. (A)

The Florida flower thrips on citrus, peanuts, beans, eggplants, and forage crops. Fla. (A)

Bees.

Beekeeping. Ark.

Miscellaneous investigations pertaining to bee keeping. (Davis Substation) Calif.

Apicultural investigations. N. J.

Bee keeping studies.--To determine the practical value and possible profits from small apiaries in the Virgin Islands. Virgin Islands.

The distribution of bee keeping regions according to soil and climatic factors. N. Y. Cornell.

The behavior of honey bees in winter. N. Y. Cornell.

The production of honey at high altitudes. Wyo.

ECONOMIC ENTOMOLOGY--Bees. (Cont.)

Meteorological influence on honey production. Iowa.

The relation of tongue length and body size to the production of honey. Iowa.

Time and labor factors involved in gathering, ripening, and storing honey by honey bees. Iowa.

The availability of various carbohydrates by the honey bee. N. Y. Cornell.

A study of pollen substitutes. Minn.

Gathering and storing natural pollen through the winter for use in the spring. Minn.

A study of the honey bee colony in confinement and the relation of stores and temperature to the health of the colony during that period. Wis.

Causes of mortality of package bees in shipment. Minn.

The combless packages of bees. Iowa.

Summer and winter results with bees. Minn.

Methods of wintering bees. Relation of physical characters of bees to honey production and study of honey plants in Kans. Kans.

The effect of temperature and humidity on the wintering of bees. Minn.

Winter consumption, mortality, spring development, honey crop of bees, bees wintered in cellars, in packing cases outside, and double-walled hives outside. Minn.

Wintering colonies on natural honey, honey dew and honey, honey dew and sugar syrup, with pollen, and on pure honey dew. Minn.

A comparison of Carniolan and Italian colonies for Minnesota. Minn.

To demonstrate the possibility of commercial queen-raising in Minnesota, its conditions, possibilities, and cost. Minn.

ECONOMIC ENTOMOLOGY--Bees. (Cont.)

Methods of controlling mating of queen bees. Minn.

The egg-laying capacity of queens. Minn.

Experimental apiaries. Studies of regional bee control. Tex.

Maintenance of a model apiary. Minn.

Records of business management of apiaries. Mich.

Bee and honey survey of Minnesota. Minn.

Honey plants in Iowa. Iowa.

A study of the actual benefit derived from bees as pollinators of plants. Minn.

Does spraying orchards kill bees? Mass.

To investigate the relative susceptibility of the honey bee to compounds of arsenic, with special reference to the excessive mortality of bees following orchard spraying. Wash. (A)

Bee disease inspection. Minn.

The factors influencing the distribution of European foul brood. N. Y. Cornell.

Control of foul brood of bees. Conn. State.

Foul brood eradication. Tex.

Inspection of apiaries. Conn. State.

Beetles. (See also Weevils and specific crop insects.)

Biology of the genus *Diabrotica*. The corn root worm and melon beetle.

A study of the economics and methods of control of the species of this genus. N. C. (A)

The biology of the *Parridae*. N. Y. Cornell.

ECONOMIC ENTOMOLOGY--Beetles. (Cont.)

Eleodes beetles. Life cycle studies of *E. hispilabris*. Experiments in spring poisoning of adults. Taxonomy of eleodes beetles of the State. Idaho.

A study of an Asiatic beetle, Anomala orientalis. Conn. State.

White grub investigations. Iowa.

Cabbage Insects. (See also specific insects and Truck Crop Insects.)

Cabbage insects. N. Y. State.

Susceptibility of cabbage aphids and caterpillars to dusting. N. Y. State.

The cabbage maggot, Phorbia brassicae. Life history, habits, and methods of control on cruciferous crops. Pa.

Experiments with baits attractive to the cabbage maggot fly. Conn. State.

To test and prove efficiency of dusting with arsenates to control cabbage worms. (Swannanoa) Substation) N. C.

Carrot Insects.

Studies on the carrot rust fly. N. Y. State.

Celery Insects.

Control of the celery leaf tier. Fla.

Chinch Bugs.

An investigation of methods for controlling the chinch bug. Mo.

Citrus Insects. (See also specific insects.)

The Florida flower thrips on citrus, peanuts, beans, eggplants, and forage crops. Fla. (A)

Orange tortrix investigations. A study of the orange worms, their life histories, habits, economic importance and control. (Citrus Substation, Riverside.) Calif.

ECONOMIC ENTOMOLOGY--Citrus Insects. (Cont.)

The larger plant bugs on citrus, pecan, and truck crops. Fla. (A)

Clover Insects. (See also specific insects and Field Crop Insects.)

A biologic study of the clover seed caterpillar, with a consideration of the methods of control. N. Y. Cornell.

A study of the life history, habits, and methods of control of certain clover pests, especially the clover seed midge. N. Y. Cornell.

Codling Moth.

Studies of the life history of the codling moth. Idaho.

A study of the life cycle of the codling moth and the best time and method of applying insecticides for controlling it.--To ascertain if it is possible to improve the present methods of controlling the codling moth. Mo.

Codling moth studies. Life history study as the basis of an effective spraying program for control. (Hood River Substation) Oreg.

To determine the most effective and economic methods of codling moth control, based on life history studies. N. Mex. (A)

Study of the number of broods of the codling moth to determine the presence and importance of the second brood and whether it is necessary to spray for it. Mass.

Codling moth control. Colo. Va.

To set the optimum time for the August spray directed against the codling moth. Mich.

The codling moth--ecology and control. Improved spray practices, new combination sprays, and better technique. Oreg.

Control of codling moth in the Great Lakes region. N. Y. State.

Codling moth control and arsenical residue investigations. Calif.

ECONOMIC ENTOMOLOGY---Corn Insects. (See also specific insects and
Field Crop Insects.)

Life history of the European corn borer in New Hampshire. N. H. (A)

The European corn borer. Life history and control. Ohio.

Investigation of the susceptibility to European corn borer attack of varieties of sweet corn as influenced by time of planting. Mass.

Control of the European corn borer. Conn. State.

Western corn root worm. A study of the life history and possible new methods of control of this species. Iowa.

The southern corn root worm, Diabrotica duodecimpunctata. Ia.

The corn ear worm and the sugar cane moth borer. La.

The corn ear worm--life history and control. Ohio.

Corn earworm investigations. Studies of oviposition and corn varietal resistance. Kans.

An investigation to determine the life history, development and habits of the corn ear worm and practical methods of controlling its ravages.-- To find some means of preventing this pest from injuring field and sweet corn. It feeds on a wide variety of plants but its main injury is on corn. The old method of fall plowing is not entirely effective and the attempt is made to find some treatment of corn ears which will keep them out. Mo.

Seasonal history of the corn ear worm. Iowa.

the effect of
Corn ear worm. Determination of the time of planting and varieties on the control of this insect. N. C. (A)

Larger corn stalk borer, Diatraea zeacobella. Study of occurrence, distribution, destructiveness, life history, habits, natural enemies, and control measures. (Willard Substation) N.C.

Native corn borers of Iowa. Iowa.

Black corn weevil, Calandra oryzae.--To determine whether corn is more injured when shocked or when left on stalk in row, increase or decrease of injury through winter, other field factors bearing on the injury. N.C.

ECONOMIC ENTOMOLOGY--Cotton Insects. (See also specific insects and Field Crop Insects.)

The ecology of cotton insects, with special reference to competition for food and interrelation. Ark. (A)

Cotton aphids.--To study the ecology of the cotton aphids and to develop methods of control, including life history, host plants, and natural and artificial control. Ala. (A)

Cotton pests. The boll weevil. Okla.

Cotton boll weevil.--To determine spread year by year, habits, life history, and natural enemies under North Carolina conditions, and control measures. N. C.

A study of the influence of different factors on the hibernation of the boll weevil. S. C.

Hibernation and dispersion of the cotton boll weevil in Tennessee. Tenn. (A)

Methods of controlling the boll weevil. Ga.

Seasonal history of the cotton boll weevil in Arkansas. Ark. (A)

Dispersal of the cotton boll weevil. Ark. (A)

Control of the cotton boll weevil. Ark.

Control of the Mexican cotton boll weevil. La.

Dusting as a means of boll weevil control. S. C.

Dusting cotton for cotton boll weevil control. Ala.

Boll weevil control. Tests of calcium arsenate both as dust and spray, as well as mixed with molasses and applied by hand. (Holly Springs Substation) Miss.

Comparative efficiency of calcium arsenate dust, calcium arsenate molasses mixtures, and other liquid poisons for boll weevil control in the cotton fields in different sections of South Carolina. S. C.

Biology of the *Thurberia* boll worm, *Thurberiphaga catalina*. Life history and relation to cultivated cotton, including also the Arizona pink boll worm. Ariz. (A)

ECONOMIC ENTOMOLOGY--Cotton Insects. (Cont.)

The Arizona (or Thurberia) boll weevil. Ariz.

Preliminary studies on pink boll worm control.--To discover, if possible, a successful and practical method of controlling the pink boll worm in cotton. Virgin Islands.

Life history and habits of a cotton leaf bug. Ark. (A)

Life history of the cotton hopper and its control. Tex.

Cotton red spider control.--To determine control measures for the red spider, Tetranychus bimaculatus Harvey, on cotton, best suited to Arkansas conditions. Ark.

Cotton insect investigations. Rhysseratus palmarum. Tex.

Field tests with various makes and kinds of machines for applying poison to cotton. S. C.

Cowpea Insects. (See also specific insects and Field Crop Insects.)

The cowpea aphid. Okla. (A)

Cranberry Insects. (See also specific insects and Fruit Insects.)

Study of injurious and beneficial insects affecting the cranberry. Mass.

Crickets.

Snowy tree crickets. Studies of their biology and control on prune trees in the Boise Valley. Idaho.

Bionomics for Iowa tree crickets. Iowa.

Tree crickets of Oregon. Life histories, habits, and distribution of species of the genus Cecanotus found within the State. Methods of control. Bark diseases associated with tree crickets. Parasites and predaceous enemies. Oreg.

Distribution, life history, economic importance, natural enemies, and control of the common field cricket, Gryllus assimilis Fabr. S. D. (A)

Life habits and control of the field cricket, Gryllus assimilis Fabr. N. D.

ECONOMIC ENTOMOLOGY--Cucumber Insects.

Cucumber insects. N. Y. State.

Control of the striped cucumber beetle, Diabrotica vittata. Ark.

Biology of the striped cucumber beetle, Diabrotica vittata. Ark. (A)

Currant Insects.

Life history of the imported currant worm. Conn. State.

Cutworms.

The life history of several common cutworms. Nebr. (A)

Cutworms. Study of species occurring, life histories, habits, natural enemies, control measures. N. C.

Cutworms. Taxonomy study of cutworms of Idaho. Idaho.

Life history studies of cutworms, particularly the pale western cutworm. Mont. (A)

The pale western cutworm in North Dakota.--To study the habits of the insect and to determine satisfactory means of control. N. Dak.

Diptera.

Biology of the Diptera. N. Y. Cornell.

A comparative study of the dipterous Zooecidia on the genus Carya. N.C.

Biology of Pollenia rudis. Md.

A biological study of the family Tachinidae.--To determine the relationship between the parasite and the host. A study of the variation in species to determine its cause and development. Life history studies. Tex. (A)

A study of the Tachinidae of the northeastern United States. N. Y. Cornell.

Black flies. N. E.

Control of root maggots. N. E. (A)

ECONOMIC ENTOMOLOGY--Earwigs.

The European earwig. Methods of control. Oreg.

Eggplant Insects.

The Florida flower thrips on citrus, peanuts, beans, eggplants, and forage crops. Fla. (A)

Comparison of dusts and sprays for controlling insect pests on eggplants. Ill.

Field Crop Insects.

Field crop insects of southern Kansas. Life histories of kafir ant, seed corn maggot, and certain sorghum infesting insects. Kans.

Insects injurious to roots of staple crops. Studies of May beetles, Lachnosterna scarbaediae, wireworms and false wireworms. Kans.

The Florida flower thrips on citrus, peanuts, beans, eggplants, and forage crops. Fla. (A)

Fleas. (See also Parasites, External.)

A biological and systematic study of Siphonaptera (fleas). N. Y. Cornell.

Flower Insects.

The study of the biology and control of the rose midge. Md.

Insects and plant diseases harmful to rose bushes in South Dakota. S.D.

Forest Insects.

Fall canker worm in mountain forests. Life history, habits, food preferences, natural enemies, possibilities of control. N. C.

The spruce budworm, Tertrix funiferana. Minn.

The biology and control of the spruce gall louse, Chermes abietis. N.Y. Cornell.

ECONOMIC ENTOMOLOGY--Forest Insects. (Cont.)

Bionomics of the birch leaf skeletonizer, Bucculatrix canadiensisella.
Conn. State.

A detailed study of the distribution, injuries, life history, and habits of the European elm scale, with special reference to its control. N. Y. Cornell.

The life history and control of the hickory gall aphid. N. Y. State.

Relations of insects to slash. Minn.

Effect of physical factors upon insects in freshly-cut logs. Minn.

Miscellaneous studies in forest entomology, insect taxonomy, and insect biology. Calif.

Insects and plant diseases harmful to ash trees in South Dakota. S. D.

Insects and plant diseases harmful to box elder trees in South Dakota.
S. D.

Insects and plant diseases harmful to elm trees in South Dakota. S. D.

Insects and plant diseases harmful to hackberry trees in South Dakota.
S. D.

Insects and plant diseases harmful to locust trees in South Dakota.
S. D.

Insects and plant diseases harmful to mountain ash trees in South Dakota.
S. D.

Insects and plant diseases harmful to poplar trees in South Dakota. S.D.

Insects and plant diseases harmful to walnut and butternut trees in South Dakota. S. D.

Insects and plant diseases harmful to willow trees in South Dakota. S. D.

Fruit Insects.

Orchard insect investigations.--To adapt present knowledge and to discover better methods of effecting the control of insect species as they become sufficiently prominent to merit attention. N. J.

Orchard insects. Ark.

ECONOMIC ENTOMOLOGY--Fruit Insects. (Cont.)

Control of fruit insects. Mich.

Investigations and demonstrations in the control of insects attacking deciduous fruit trees in California. Calif.

Insect pests of brambles. A study of the insect pests of brambles, with special reference to those that may be responsible for the transmission of virus diseases. Oreg.

The fruit tree leaf roller. Mont.

Oriental fruit moth.--To study the life history of the oriental fruit moth, Laspeyresia molesta Busck, and to develop methods of control. Ala. (A)

Gooseberry Insects.

The gooseberry root borer. Oreg.

Grape Insects. (See also specific insects and Fruit Insects.)

Control of (a) the peach tree borer, (b) the grape leaf hopper, (c) the grape-berry moth, and (d) the pear psylla. Mich.

Life history and relationships of the grape leaf-hoppers, Erythroneura comes, E. 8-notata, and E. vulnerata. Ky. (A)

Control of the grape-berry moth. N. Y. State.

To ascertain the safeness of paradichlorobenzene to grapevines and its effectiveness against the grape root worm. N. Y. State.

Grasshoppers.

Grasshoppers. Study of the Atlantic group. Mont. (A)

A study of the egg deposition of injurious grasshoppers of Iowa. Iowa.

Effect of temperature and humidity upon the grasshoppers Melanopus atlanticus and Cammula pelludida. Minn.

Grasshopper control. Colo. Minn.

ECONOMIC ENTOMOLOGY--Grasshoppers. (Cont.)

Grasshopper control by means of poison baits. Wis.

Grasshopper control, The relative efficiency of different poison mixtures in poisoning grasshoppers. Nebr.

Grasshoppers. Experiments in sprays for protection of alfalfa seed crops. Idaho.

Grass Insects.

Grass and forage insects. Ohio.

Greenhouse Insects.

Study in the control of insect pests in greenhouses, including aphids, aleyrodidae, coccids, millipeds, and chrysanthemum midge. Mich.

The life history and control of the greenhouse mealy bug. Md.

The life history and control of the red spider.--To study the life history under greenhouse conditions and to develop satisfactory methods of control. Md.

Gypsy Moth.

Control of the gypsy moth. Conn. State.

Hessian Fly.

Hessian fly investigations. Life history, control measures, and wheat varietal resistance. Kans.

The full history of the Hessian fly. Limits of the brood, or broods if more than one. Ky.

To determine accurately the life cycle of the Hessian fly in Missouri and the most effective methods of controlling it. Mo.

Seasonal history and field control of the Hessian fly in North Dakota.--To determine the summer brood and occurrence in the fall and methods of control best suited to the spring wheat region. N. Dak.

ECONOMIC ENTOMOLOGY--Hessian Fly. (Cont.)

Hessian fly control. Ohio.

Parasites of the Hessian fly. A study of the species occurring, abundance, effectiveness, etc. N. C.

Household Insects.

Household insects. Species occurring, habits, life history, damage, and control measures. N. C.

Studies in the control of insect pests of dwellings and stored food, including white ants, bedbugs, ants, carpet beetles, and moths. Mich.

The webbing clothes moth, Tineola bisselliella, and its control. N. Y. Cornell.

Hymenoptera.

Classification of the hymenoptera. N. Y. Cornell.

Distribution and variation of Bombidae. N. Y. Cornell.

Catalogue of Bombidae. N. Y. Cornell.

Revisionary studies of North American Crabroninae. N. Y. Cornell.

Revision of the Thynnidae of Chile. N. Y. Cornell.

Wing venation of the Hymenoptera. N. Y. Cornell.

Insecticides and Fumigants. (See also HORTICULTURE--Spraying, Dusting and Fumigating, General.)

New insecticides and fungicides. N. Y. State.

Comparative insecticide tests.--To study the lethal effect of new insecticides on plant tissues. Md.

Investigation of materials which promise value in insect control. Mass.

ECONOMIC ENTOMOLOGY--Insecticides and Fumigants. (Cont.)

Comparison of dry and liquid insecticides in controlling fruit insects. Kans.

Attractants and repellants. A study of substances and compounds that attract or repel insects. Mont. (A)

Reactions between inorganic materials used as insecticides and fungicides when mixed to form combination sprays or dusts. N. Y. State.

A study of fumigation processes. (Citrus Substation, Riverside) Calif.

An investigation of the species factor in insect control by fumigation. Ala. (A)

Control of injurious insects by dusting. N. Y. State.

Orchard dusting. Ohio.

Killing efficiencies of dust mixtures with different physical properties. N. Y. State.

Comparative susceptibility of various insects to contact dusts containing various fillers and adhesives. N. Y. State.

The toxicity of insecticides. S. C. (A)

A study of the toxic values of insecticides and the comparative resistance of insects to poisons. (a) Intensive study of spreaders. (b) A study of the improvement of poison sprays. Creg.

The toxicity of the insecticide compounds of arsenic. Wash.

Neutralization of soluble arsenic, copper and lead compounds with calcium of magnesium. N. Y. State.

The use of carbon tetrachloride, either alone or in combination with paradichlorobenzene or chloropicrin, for fumigating grain in elevators. Minn.

Determination of best strength of lime sulphur. Mass.

The volatility and toxicity of nicotine as an insecticide and parasiticide. Calif.

ECONOMIC ENTOMOLOGY--Insecticides and Fumigants. (Cont.)

Determination of efficiency of nicotin sulphate dusts. Mass.

Comparative insecticidal properties of nicotin sulphate and tobacco dust in combating various plant bugs and aphids. N. Y. State.

The chemical, physical and insecticidal properties of commercial pine oils and creosotes and their action on various insects as well as on plants and the germination of seed. Md. (A)

A study of California petroleum and their derivatives with reference to their toxicity to insects and their reaction to plants. Calif.

Insecticidal and fungicidal properties of sulphur. N. Y. State.

Preparation and properties of sulphid solutions. N.Y. State.

A study of the Xanthates with special reference to their use as insecticides as well as soil sterilizers. Calif.

Tree tanglefoot investigations. Minn.

Spreaders:--Tests of value of calcium caseinate under southwestern Idaho conditions. Idaho.

A study of the efficiency of spreaders and stickers for insecticides. Md. (a)

Investigations of adhesiveness of insecticides. N.Y. State.

Efficiency of "stickers" in increasing the insecticidal value of Bordeaux mixture. Iowa.

Control of insects by means of impregnation of the sap of plants with poisonous substances. W.Va. (A)

The effect of insecticides and fungicides on plants. N.H. (A)

Study of possible injurious effects of scalecide on trees. Mass.

Insect Surveys.

Insect pest survey. Ark.

Insect survey of Connecticut. Conn. State.

ECONOMIC ENTOMOLOGY--Insect Surveys. (Cont.)

Indiana insect survey.--To explore, exploit, record, map, collect, and study the insect fauna of Indiana:--To determine the occurrence and range of all insects of the State and to study their relation to plants, animals, human welfare, etc. Ind.

Indiana insect survey.--To study the relation of insects to the changing conditions, i.e., swamp areas being reclaimed by drainage, peat bogs, sand areas, etc., being put under cultivation for the first time, etc.; also, studies of the small lake areas, caves, etc. Ind.

Determination of limits of pests in Massachusetts to determine what part of the State, if any, need not pay attention to these pests. Mass.

Insect survey of Montana. Mont.

The insect fauna of the McLean wild life preserve. N. Y. Cornell.

Cooperation on McLean survey (entomological). N. Y. Cornell.

Insect survey of North Carolina.--To secure as full information as possible concerning the insect life of the State, the species occurring, distribution, economic relations, biology, and ecology. Preparation of lists, collections, maps, etc. N.C.

Leafhoppers.

Biology of the Homoptera (Leafhoppers). Study of the ecology, distribution, systematics and economics of the members of this group. N.C. (A)

The entomology and parasitology of curly leaf of sugar beets. A study of the internal anatomy and histology of nonvirulent and virulent leafhoppers. Calif. (A)

Leafhopper control studies. Idaho.

Leaf Miners. (See also insects of specific plants.)

The boxwood leaf miner. (Monarthropalpus buxi. Lab.) Md. (A)

Leaf Rollers.

The leaf roller. Wash.

Leaf roller investigation. (Hood River Substation) Oreg.

The fruit tree leaf roller; control experiments under Idaho conditions. Idaho.

ECONOMIC ENTOMOLOGY--Lepidoptera.

The stalk borer (Papaipema nitella). N.H.

Melon Insects. (See also specific insects and Truck Crop Insects.)

Injurious insect pests of the melon and related crops. Special attention directed to the striped cucumber beetle, the spotted beetle, the melon louse, the squash stink-bug, and the squash vine borer.--To determine what pests must be dealt with by growers of these crops and to develop a practical and effective means for preventing and controlling them. Mo.

Effects of dust mixtures on cucurbits and melon aphids and beetles. N.Y. State.

Mites. (See also insects of specific plants.)

Systematic study of Ohio mites and testing of control methods for economic species. Ohio.

Spider mites on fruit trees.--To determine species, distribution, and methods of control. N.Y. State.

Controlling the European spider mite. Ohio.

Tests of methods of control of the European red mite. Md. (A)

Mosquitoes.

A systematic and biological study of the Culicidae (mosquitoes) of eastern North America. N.Y. Cornell.

Malaria-mosquito investigations.--To devise means of combating malaria in those sections of the State where this disease is a serious handicap to agricultural development. Calif.

Mosquitoes and their control. Species occurring in the State, their distribution, abundance, habits, and control measures. N.C.

Mosquito control.--To discover the principles which underlie mosquito breeding, mosquito flight in attraction to man, and to free the areas in New Jersey which are now seriously troubled with mosquitoes from the incubus of this pest. N.J.

Elimination of the mosquito nuisance in salt water marshes. Conn. State.

ECONOMIC ENTOMOLOGY--Nursery Insects.

Inspection of orchards and nurseries (entomological). Conn. State.

An investigation to determine what insects are injurious to nursery stock in the State, their life histories, distribution, injury and methods of control. Mo.

To ascertain a method of control of the woolly aphis, especially applicable to trees in the nursery. Md.

Nursery inspection. (Entomological) Mo.

Onion Insects. (See also specific insects and Truck Crop Insects.)

Control of onion thrips. Mass. Mich.

Parasites, External. (See also Fleas, Mosquitoes, and Ticks.)

Studies of fly repellants. Minn.

Poisonous insects. Minn.

The horse louse--its life history and control. Conn. Storrs.

A study of the Mallophagi infesting the birds of New York State. N.Y. Cornell.

Parasites of Insects.

Catalogue of parasites, other than Arthropoda, of the Arthropoda. N.Y. Cornell.

Host and species catalogues of insect parasites of Arthropoda. N.Y. Cornell.

Biological and ecological study of Tachinidae parasitic on the insect pests of southern crops. Miss. (A)

An investigation of the artificial propagation and distribution of beneficial, predaceous and parasitic insects. Oreg. (A)

Introduction of beneficial insects, including the California white-fly-eating lady beetle, Delphastus, the Sicilian mealy-bug parasite, Paraleptomastis, the European mealy-bug-eating lady beetle, Scymnus, parasites of the cane borer, and other promising parasites. Fla.

Miscellaneous investigations regarding beneficial insects:--Especially investigations in the control of citrus scale pests by means of parasites and the biological control of mealy bugs. (Riverside and Whittier Substations) Calif.

ECONOMIC ENTOMOLOGY--Parasites of Insects. (Cont.)

The parasites and symbionts of insects. Minn.

Pea Insects.

Investigation of pea aphid. Wis.

Pea aphid control. Mich.

Peach Insects. (See also specific insects and Fruit Insects.)

Control of the peach tree borer. Iowa.

Control of peach and apple tree borers. W.Va.

The toxic reactions of the peach tree borer as affecting control.--
To ascertain the color reactions of adult peach tree borers. Md.

Control of (a) the peach tree borer, (b) the grape leafhopper, (c) the grape berry moth, and (d) the pear psylla. Mich.

Paradichlorobenzene treatment for the control of the peach borer (Aegeria opalescens H. Edw.), the pear root aphid (Eriosoma lanuginose, Hartwig), the woolly apple aphid (Eriosoma lanigera, Hanson) Calif.

To ascertain the safeness and effectiveness of paradichlorobenzene for the control of the peach borer. N.I. State.

Control of peach borer with paradichlorobenzene. N.C.

The peach and prune root borer. Life history studies and tests of washes, sprays, paints, and protectors. Oreg.

A study of the life history and control of the peach twig borer (Anarsia lineatella). (Davis Substation) Calif.

Life history and methods of control of the oriental peach moth, Laspeyresia molesta. Conn. State.

A study of the life history and control of brown rot and curculio of peaches. Ga.

Peach deforming plant bugs. N.Y. State.

Control of peach plant bugs by dusting. N.Y. State.

ECONOMIC ENTOMOLOGY--Peach Insects. (Cont.)

Peach and plum curculio. Life history, habits, biology, natural enemies, and control measures. N.C.

Peanut Insects.

The Florida flower thrips on citrus, peanuts, beans, eggplants, and forage crops. Fla. (A)

Pear Insects. (See also specific insects and Fruit Insects.)

Leaf rollers and fruit worms of apple and pear. Study of species and tests of different sprays and time of spraying for control. Oreg.

Effectiveness of dusting in controlling the pear psylla. N.Y. State.

Control of pear psylla. N.Y. State.

Control of (a) the peach tree borer, (b) the grape leafhopper, (c) the grape berry moth, and (d) the pear psylla. Mich.

Elister mite control on apples and pears. Observations on life history and habits. Time of application and various combinations and strengths of insecticides for its control. (Hood River Substation) Oreg.

Pecan Insects. (See also specific insects.)

Field study of the insects attacking the pecan, including control measures. Fla.

Pecan insects. Study of economic importance, life history, habits, biology, and control measures of insects affecting the pecan. (Willard Substation) N.C.

A systematic and biological study of insects affecting the pecan. Miss. (A)

Investigations of the pecan bud moth. Tex.

To determine the life history, ecology, and control of the pecan weevil (Balaninus caryae Horn) Ala. (A)

The larger plant bugs on citrus, pecan, and truck crops. Fla. (A)

Peppermint Insects.

Peppermint insects. Mich.

ECONOMIC ENTOMOLOGY--Phenological Insect Investigations.

Climatic relationship of insects. Mont. (A)

Climate and insect investigations.--To discover the general principles which underlie the response of injurious insects to the climatic complex and to develop important clues to new and better methods of insect control. N.J.

Relation of temperature to insect life. W. Va. (A)

The relation of temperature and moisture to insect activity. S.C. (A)

Studies of the effects of temperature and moisture conditions in the behavior of the Hessian fly, chinch bug egg parasite, (Aphis maidis, and Aphis prunifoliae. Kans.

Studies of areas with late frosts as shown by insect distribution. Mass.

Plum Insects. (See also specific insects and Fruit Insects.)

Peach and plum curculio. Life history, habits, biology, natural enemies, and control measures. N.C.

Potato Insects. (See also specific insects and Field Crop Insects.)

Potato spraying and flea-beetle control. Determination of spraying program for best control of the flea-beetle and other potato insects; also other methods of flea-beetle control if needed. (Swannanoa Substation) N.C.

Potato spraying, to determine the value of spraying and dusting with various compounds for control of potato leafhopper. Minn.

Spraying project to control potato leafhoppers. Wis.

Life history and injury of the potato leafhopper, Empoasca mali. Minn.

Spraying potatoes with Bordeaux mixture.--To determine the effect of Bordeaux mixture on the various insects that affect potatoes. N.Dak.

Potato insects. A survey of potato insects with special reference to those that may be responsible for the transmission of virus diseases. Oreg.

Potato insects. (Long Island Vegetable Research Farm) N.Y. State.

ECONOMIC ENTOMOLOGY--Prune Insects. (See also specific insects and Fruit Insects.) (Cont.)

The peach and prune root borer. Life history studies and tests of washes, sprays, paints, and protectors. Oreg.

Raspberry Insects.

Life history, habits and control of raspberry insects. N.Y. State.

Red Spiders.

The life history and control of the red spider.--To study the life history under greenhouse conditions and to develop satisfactory methods of control. Mi.

An investigation of the life history, habits, and control of the imported red spider. Pa.

Hop red spider (Tetranychus telarius). A study of methods of control. Oreg.

San José Scale.

San José Scale: life history and control.--To study the life history and the effectiveness of different scalecides in the control of this insect. N.Mex.

San José scale spraying experiments.--To determine if boiled lubricating oil emulsion is as effective as, or more effective than, lime sulphur in the control of San José scale and to determine the best time or times of application. Ill.

To determine the value of lubricating oil sprays for San José scale in southern Oregon. (Talent Substation) Oreg.

Scale Insects. (See also San José Scale.)

Dates of hatching of scale insects, and fixing dates for spraying the same. Mass.

Systematic and biological study of scale insects of Mississippi. Miss.
(A)

The biology of the European elm scale. (Gossyparia spuria) N.Y. Cornell.

A biological study of the oyster-shell bark louse. (Lepidosaphes ulmi) N.Y. Cornell.

ECONOMIC ENTOMOLOGY--Shade Tree Insects.

Shade-tree insect investigations. Study of insects affecting elms and cedars. Kans.

Insects affecting shade and shelter belt trees in North Dakota.--To determine the various insects that cause damage to shade and shelter belt trees in the State and to conduct experiments concerning adequate means of control. N.Dak.

Shade tree insects - The bagworm, fall web worm, and walnut caterpillar. Ark. (A)

Soy Bean Insects.

Green clover worm (*Plathypena scabra*) on soy beans. Life history, habits, natural enemies, and control measures. (Elizabeth City Substation) N.C.

Squash Insects. (See also specific insects and Truck Crop Insects.)

Control of the squash bug. Mass.

Control of the squash-vine borer. Mass.

Stored Products Insects.

Studies in the control of insect pests of dwellings and stored food, including white ants, bedbugs, ants, carpet beetles, roaches, grain and flour beetles, and moths. Mich.

A study of the rôle of temperature and humidity in the development of insects in flour and other cereal products in storage. Minn. (A)

Measures for protecting wheat flour and other cereals from insects. Minn.

The protection of dried fruit from insects. Minn.

Strawberry Insects. (See also specific insects and Fruit Insects.)

Control of the strawberry aphid. Md.

The strawberry root louse. Ala.

The strawberry weevil. Life history studies of this insect in the Ozark region. Ark. (A)

ECONOMIC ENTOMOLOGY--Strawberry Insects. (Cont.)

Dusting strawberry fields to control the strawberry weevil. Md.

Strawberry root weevil control. (Hood River Substation) Oreg.

Sugar Cane Insects.

The sugar cane moth borer. (Diatraea saccharalis Fab). La.

Systematic Entomology.

Monographic studies on the family Miridae (Hemiptera-heteroptera). Minn.

Study of types of Chironomidae and Mycetophilides. N. Y. Cornell.

The Diptera of South Dakota. S.Dak.

The Diptera of the Wild Life Reservation at McLean. N.Y. Cornell.

Formation of the embryonic envelopes in Diacrisia virginica. N.Y. Cornell.

Trap lantern run for seasonal distribution of local Lepidoptera. N.Y. Cornell.

General work on Lepidoptera. N.Y. Cornell.

The Lepidoptera of South Dakota. S.Dak.

Study of neotropical Vespidae and their nests. N.Y. Cornell.

A systematic and biological study of some Halticidae, an important family of beetles affecting agricultural crops. N.Y. Cornell.

Monograph of North American Plecoptera. N.Y. Cornell.

The Plecoptera of South Dakota. S.Dak.

The Blattoidae of South Dakota. S.Dak.

The Coleoptera of South Dakota. S.Dak.

The Dermaptera of South Dakota. S.Dak.

The Hemiptera of South Dakota. S.Dak.

The Homoptera of South Dakota. S.Dak.

ECONOMIC ENTOMOLOGY--Systematic Entomology. (Cont.)

The Hymenoptera of South Dakota. S.Dak.

The Isoptera of South Dakota. S.Dak.

The Mallophaga of South Dakota. S.Dak.

The Mantoidea of South Dakota. S.Dak.

The Corrodentia of South Dakota. S.Dak.

The Neuroptera of South Dakota. S.Dak.

The Odonata of South Dakota. S.Dak.

The Orthoptera of South Dakota. S.Dak.

The Panorpatae of South Dakota. S.Dak.

The Phasmoidea of South Dakota. S.Dak.

The Plectoptera of South Dakota. S.Dak.

The Siphunculata of South Dakota. S.Dak.

The Suctoria of South Dakota. S.Dak.

The Thysanoptera of South Dakota. S.Dak.

The Trichoptera of South Dakota. S.Dak.

The stone flies, May flies and dragon flies of southern California.
N.Y. Cornell.

Thrips.

A systematic study of the Thysanoptera (thrips) of New York State.
N.Y. Cornell.

The Florida flower thrips on citrus, peanuts, beans, eggplants, and
forage crops. Fla. (A)

Ticks.

A study of the Ixodidae (ticks) of New York State. N.Y. Cornell.

ECONOMIC ENTOMOLOGY--Tobacco Insects. (See also specific insects and Field Crop Insects.)

The flea beetles of tobacco. Ky. (A)

Tobacco flea-beetle.--To secure a satisfactory method of control for this insect under farm conditions. (Wendell and Oxford Substations) N.C.

Tomato Insects.

The tomato fruit worm. Experiments with corn as a trap crop. Tenn.

Truck Crop Insects.

The study of control of truck crop insects of California, particularly the garden centipede (Scutigera immaculata). Calif.

Garden or truck insects. Ohio.

Truck crop insects and control. Wis.

Vegetable insect investigations.--To adapt present knowledge and to discover better methods of affecting the control of insect species as they become sufficiently prominent to merit attention. N.J.

Important insects affecting garden crops. (a) Harlequin cabbage bug, cabbage aphid, cabbage butterflies, cabbage loopers, flea-beetles, onion thrips, cutworms, squash bug, cucumber beetles, and possible new pests. (b) To learn of the natural enemies and other factors influencing the prevalence of the pests. (c) To determine possible adequate and practical means of control. N.Mex.

An investigation of the life history, habits, and methods of control of the plant lice (aphididae) affecting truck crops. Pa.

Control of the corn earworm on truck crops. W.Va.

Control of the garden flea-hopper. Fla.

The larger plant bugs on citrus, pecan, and truck crops. Fla. (A)

A study of the control of Millipedes affecting truck crops and field crops. Pa.

ECONOMIC ENTOMOLOGY--Turnip Insects.

The turnip webworm (Hellula undalis). Life history and method of control.
Ala. (A)

Velvet Bean Insects. (See also specific insects and Field Crop Insects.)

Life history studies of the velvet bean caterpillar (Anticarsia gemmatilis)
Fla. (A)

Walnut Insects.

Codling moth in walnuts. (Citrus Substation, Riverside) Calif.

Weevils. (See also insects of specific crops.)

Biology of the genus Bruchus (bean and pea weevil). Life history studies
and methods of control. N.C. (A)

Wheat Insects. (See also specific insects and Field Crop Insects.)

Wheat insect pest survey. Iowa.

The wheat stem maggot (Meromyza americana Fitch) its distribution, food
plants, economic importance, life history, habits, natural enemies,
and control. S.Dak. (A)

Wireworms.

The wireworm. Wash.:

Study of the life history, methods of control, and relation of soil
type to destructive wireworms. Iowa.

Wireworms: Locality survey at Parma; studies in bionomics and control;
taxonomy of wireworms of the State. Idaho.

Miscellaneous.

General insect investigations. Colo.

- Root and soil infesting insects - methods of control, including onion
maggots, root weevils, symphylids, and other underground insects.
Oreg.

ECONOMIC ENTOMOLOGY--Miscellaneous. (Cont.)

Investigations in soil treatment of subterranean insects. Wash. (A)

Soil infesting insect investigations. N.J.

Insects as carriers of certain plant diseases.--To determine what insects, if any, are important in the transmission of mosaic and certain other diseases of plants, with a view of more complete control of the plant diseases. Ind.

Insects in relation to spread of plant diseases. Wis.

The biology of aquatic insects. N. Y. Cornell.

The caddice worms of lake beds. N. Y. Cornell.

Insects affecting the health of animals. Wyo.

Investigation and control of injurious insects, mammals, and birds. Nebr.

Corroborative control studies.--To test the efficiency and practicability under Indiana conditions of controls reported elsewhere, including control of the peach tree borer, San Jose scale, oyster shell scale, cucumber beetle and aphid, cabbage maggot, onion maggot, onion thrips, and Hessian fly. Ind.

An investigation to determine how sap-sucking insects injure plants. Mo.

Miscellaneous insects:- (a) Fruit tree leaf roller, (b) blister mite, (c) sugar beet crown borer, (d) sugar beet root maggot, (e) dusting, (f) insectivorous habits of reptiles, (g) pine leaf borer, (h) field ants, (i) insect pest survey, (j) graduate student work. Utah.

Histology of the eye and optic ganglion in flies. N.Y. Cornell.

Bionomics and control of ground cherry worms. Iowa.

Insect collection. Minn.

Collection and identification of Arizona insects, especially the economic forms. Ariz.

Insectary work. Minn.

Miscellaneous entomological investigations. W.Va.

Studies of insect outbreaks as they may appear. Mass.

An investigation to determine the causes of the periodical recurrence of insect pests as scourges. Mo.

Administrative, including all general phases of investigational work on insects of economic importance. N.Dak.

FOODS AND HUMAN NUTRITION

Food Preservation. (See also Storage Studies.)

A study of methods designed to prevent darkening of fruit during the drying process without the use of sulphurous acid. (Davis Substation) Calif.

The function of sulphur dioxide in the drying of fruits. Calif.

Moisture loss in dried fruits. Calif.

A survey of the deciduous fruit drying industry of the State. An inquiry into the best localities, varieties, yields, methods, equipment, and costs of producing dried fruit in California both by sun drying and by artificial evaporation. Calif.

Methods of preparing various fruit juices, including the development of methods of preparing carbonated beverages from fruits and their application to commercial production. Calif.

FOODS AND HUMAN NUTRITION--Food Preservation. (Cont.)

Methods of making glacé fruits, with a study of the use of fruit in confections. Calif.

The preservation of grapes by chemical preservatives. (Davis Substation) Calif.

Grape syrup. Calif.

New methods of packing dried fruits. Calif.

An experimental study of equipment for drying and curing of deciduous fruits on a commercial scale. Calif.

Dehydration of fruits and vegetables. Oreg.

Canning of Oregon-grown apples. Oreg.

Canning oranges and mangoes.--To preserve perishable tropical fruits to the end that they may be profitably marketed. Porto Rico.

Heat-resisting bacteria of fresh and canned vegetables and their relation to spoilage. Colo. (A)

Effect of sulphur sprays on canned gooseberries. Oreg.

The effect upon the quality of olives of methods of sterilization. An investigation of the bacterial spoilage of olives during pickling. Calif.

Olive pickling. Calif.

Dehydration of walnuts and walnut dryers. Oreg.

The use of preservatives in sweet cider.--To learn the effect of various preservatives on the keeping and tasting qualities of sweet cider. Ill.

Egg preserving. Mont.

Studies in the keeping qualities of certain foods in household refrigerators. N.Y. Cornell.

Human Nutrition.

The effect of external temperature on the basal metabolism of young women under usual conditions of dress. Mo.

A nutrition problem, with special reference to negro children. Mo.

Nutrition of infants. Utah.

FOODS AND HUMAN NUTRITION--Human Nutrition. (Cont.)

The nutritive value of wheat and wheat products. Wash. (A)

Studies regarding the nutritive value of milk, its suitability for food for children and animals, conditions which affect its nutritive value, tolerance and related questions. Vt. (A)

Milling and Baking. (See subhead under FIELD CROPS--Wheat.)

Storage Studies.

Fruit storage. Wash.

Physiological aspects of fruit storage. Md. (A)

Storage of fruits at low temperatures. Calif.

Factors involved in the cold storage of fruits. N.Y. Cornell.

Storage of fruits at low temperatures for preserving, canning and soda fountain use. A study of the preservation of different fruits in the fresh condition by means of freezing temperatures; also, the effect of freezing in sugar solution upon changes in chemical composition and quality. Calif.

The cold storage of certain semi-tropical fruits. The behavior of certain varieties of persimmons and jujubes at 32 degrees F., and the effect of CO₂ fumes upon the astringency of the Goshio Japanese persimmon. Calif.

Fruit precooling. Mich.

The influence of humidity on respiration and respiratory changes in fruit during storage at low temperatures. N.Y. Cornell.

A demonstration and study of the effect of degree of stage of ripeness of fruit at picking upon its behavior in cold storage. Effect of maturity and region wherein grown upon the keeping quality of plums at different temperatures. (Davis Substation) Calif.

Cold storage for Iowa apples. Iowa.

Management of a cool apple storage cellar.--To study the various factors influencing successful cool storage of fruit, the influence of various types of wrappers and containers upon the keeping qualities of the fruit, and the physiological changes in fruit associated with changes in temperature and humidity, and the influence of maturity, quality and size of fruit on the rate of these changes. Ind.

FOODS AND HUMAN NUTRITION--Storage Studies. (Cont.)

The keeping qualities of apples in cold storage as affected by the health and vigor of the trees. A study of the conditions which favor and oppose the internal browning of the Yellow Newtown when grown under Pajaro Valley conditions. Calif.

Respiration of apples in relation to their keeping quality. A study of the respiring quotient of apples at common-storage and cold-storage temperatures. N.Y. Cornell.

A study of the comparative keeping qualities of different varieties of pears in cold storage. The effect of high and low temperatures upon the keeping quality and ripening of pears. Calif.

Chemical changes in the ripening and storage of the apple. Iowa.

Storage tests with vegetables.--To determine best storage varieties and proper conditions of storage for various crops. N.Dak.

Changes in flour during storage. Utah.

Miscellaneous.

An investigation of the principles of jelly making as applied to tropical fruits. Hawaii.

The use of fruits in ice cream. (Davis Substation) Calif.

Investigation of sauerkraut production. Wis.

Potato investigations. Potato cooking trial. Oreg.

The cooking quality of Colorado potatoes. Colo.

A study of the energy value of milk. Ill.

Comparison of food values in milk of different grades. Va.

Commercial manufacture of acidophilus milk. Conn. Storrs.

Analysis of diabetic foods. Conn. State.

Boston food supply study. Mass.

Studies in fuel consumption in the preparation of meals by use of certain types of cookers. Ind.

FEEDING STUFFS AND ANIMAL NUTRITION.

Animal Nutrition.

Study of factors influencing the normal rate of growth in domestic animals and the permanency of the effects of arrested development. Mo. (A)

The part played by proteins, carbohydrates and fats in nutrition. Conn. State. (A)

Studies of the factors necessary in the maintenance of mammals as vitamins, light, etc. Wis. (A)

Relation of feed consumed to protein and energy retained in the carcass. Mo.

Minimum crude fiber requirements for ruminants. Mich.

Work with small animals on protein needs and maintenance needs. Vt.

Studies of the factors necessary for the maintenance of mammals, as vitamins, light, etc. Wis. (A)

A study of routine procedure in net energy estimation. Pa. Inst. of An. Nutr. (A)

Experiments on the protein requirements for growing cattle.--To determine the optimum protein requirement for the growth of cattle without material fattening. N.Dak. (A).

Protein storage in protoplasmic tissue. Work on the amino acids in the globulins and albumins of beef flesh in fat and very thin cattle. Mo. (A)

Influence of nutrition of heifers and the age of breeding upon their subsequent development. Protein requirements for growth. Mo. (A)

Food requirement for growing dairy cattle. Energy requirements for growth. Minn.

The minimum protein requirement for milk production. Pa. Inst. of An. Nutr. (A)

Relative utilization of energy in milk production and in fattening. Pa. Inst. of An. Nutr. (A)

The protein and energy requirements for milk production: (a) Protein requirements for milk production; (b) the effects of high and low protein rations on milk production, metabolism, and growth of the animal. Va. (A)

FEEDING STUFFS AND ANIMAL NUTRITION--Animal Nutrition. (Cont.)

Maintenance requirement of dry cows and utilization of energy in fattening. Pa. Inst. of An. Nutr. (A)

Maintenance requirement of dry cows and utilization of energy in fattening and in milk production. Pa. Inst. of An. Nutr. (A)

Maintenance requirements of dry cows and utilization of energy in fattening and in milk production (fasting metabolism). Pa. Inst. of An. Nutr. (A)

Protein needs of dairy cows. Vt. (A)

Minimum protein requirements for the growth of dairy heifers. Mo.

Energy requirements for maintenance of calves. Minn.

The maintenance energy requirement of sheep and utilization energy of alfalfa hay. Ill. (A)

The utilization of energy of fattening lambs. Ill. (A)

Specific nutritional effects of rations upon swine and sheep. Iowa.

A study of feed requirements for growth and reproduction of swine. Kans. (A)

The influence of the plane of nutrition on the feed requirements per unit of gain in pigs. Tex.

Nutritional requirements of poultry. Mo.

Nutritive requirements of growing chicks. A study of the essentials of a ration for baby chicks. Nebr. (A)

Study of the nutritional requirements of baby chicks reared in confinement. Conn. Storrs.

The development of a ration which will accurately show the requirement of growing chicks for the various food factors. N.Y. Cornell.

The net energy value of feeds for chicks.--To determine the net energy value of different farm feeds for chickens of different age and sex. Ill. (A)

Study of basal metabolism with cattle and sheep during various stages of development, including (a) pregnancy or foetal growth, (b) first year's growth after birth, (c) second year's growth after birth. N.H. (A)

Metabolism trials with young calves. Iowa.

FEEDING STUFFS AND NUTRITION--Animal Nutrition. (Cont.)

Metabolism in the chicken. Ky. (A)

Studies in digestion in herbivora. Minn.

To determine the comparative rates at which different foods pass through the digestive tract of the hen and the comparative rates of absorption. Ill. (A)

Effect of organic nutrients from various sources and of light on the growth and reproduction of poultry, with special emphasis on a study of "leg weakness." Wis. (A)

Effect upon milk production of varying amounts of the same feed. Pa. Inst. of An. Nutr. (A).

Effects upon milk production of varying amounts of the same feed and utilization of feed energy. Pa. Inst. of An. Nutr. (A)

Influence of specific natural foods, especially straws and certain grasses, on reproduction in herbivora. Wis. (A)

The physiological effect of feeding rations restricted to Canadian field peas on growth and reproduction in swine. Idaho.

Influence of velvet beans alone on secretion of milk in brood sows and on condition of litters. Ala.

Feed requirements for dairy cattle. v. Milk as a sole diet for calves. Minn.

A study of the growth and development of suitable rats fed with and without dairy products.--To determine the food value of dairy products and their place in the diet. Ind.

Deficiencies of feed hens as affecting the vitality of chicks. A study of the effect of feeds deficient in one or more essential factors, i.e., ash, protein, fat-soluble A and fat-soluble B vitamins, fed laying hens on the vitality of the chicks. Kans. (A)

The effect of diet on fertility. Conn. State. (A)

Deficiencies of feed fed hens as affecting the vitality of chicks. A study of the effect of feeds deficient in one or more essential factors, i.e., ash, protein, fat-soluble A and fat-soluble B vitamins, fed laying hens on the vitality of the chicks. Kans. (A)

FEEDING STUFFS AND ANIMAL NUTRITION--Animal Nutrition. (Cont.)

A systematic study of the physical reaction of hens to incomplete rations, with particular reference to the so-called nutritional roup. N.Y. Cornell.

The relation of diet to bodily activity and the capacity to withstand unfavorable circumstances. Mo.

Feeding Stuffs, Composition and Nutritive Value.

Digestion trials on prairie grass hay.--To determine the digestibility of prairie grass hay from annual and biennial cuttings. N.Dak.

Digestibility and metabolizable energy studies.--To determine the digestibility and metabolizable energy in different silages when these are combined with other feeds in rations. N.Dak. (A)

The digestibility and metabolizable energy of silage made from the stover of shocked corn. Ill.

Miscellaneous digestibility and metabolizable energy studies.--To determine the digestible nutrients and metabolizable energy in various feeding stuffs. N.Dak.

The digestibility and nutritive value of Pinto beans and Pinto bean straw, and their use as a feed for cattle. N.Mex. (A)

Studies on digestion of feeds. [with poultry] N.Y. Cornell.

The digestibility and metabolizable energy of soy bean products for sheep. Ill. (A)

The mutual influence of the proportion of the several nutrients in feeds on their digestibility. N.Mex. (A)

Investigation of the nutritive value of feeds. Studies of (a) the productive values, (b) the proximate composition, and (c) the digestibility of the proximate constituents of feeding stuffs. Tex. (A)

The relative vitamin, protein, amino-acid and mineral values of certain forage crops for growth and reproduction. Ark. (A)

Relation of the chemical structure of the proteins to their nutritive value. Conn. State. (A)

Efficiency of various protein mixtures for growth in swine and milk production in dairy cows. Wis. (A)

FEEDING STUFFS AND ANIMAL NUTRITION--Feeding Stuffs, Composition and
Nutritive Value. (Cont.)

A comparison of the production values of grain mixtures of different protein content. N.Y. Cornell.

The nutritive value of the proteins of feeding stuffs and biological values of the various proteins. Ill. (A)

The composition and deficiencies of range feeds. Tex.

Determination of the mineral constituents of various Florida-grown cattle feeds, as compared with feeds grown farther north. Fla.

Analysis of chick cottonseed meal and mixed fertilizers. Conn. State.

Effect of cottonseed meal upon growth and reproduction of cows and heifers.--To determine the cause of excessive amounts of cottonseed meal causing abortion, producing calves that are blind, contain soft bone, and frequently show edemic conditions of the body at birth. N.C.

Relative value of cottonseed meal and velvet beans. Miss.

The relative net energy values of timothy, clover, and alfalfa hay and oat straw. Ill. (A)

The relative value for milk production of the protein of legume and non-legume roughage. A nitrogen balance experiment. N.Y. Cornell.

Peanut studies: The nutritive value of the peanut when fed as (a) the raw peanut without hulls, but with sheath, (b) the roasted peanut without hulls, but with sheath, (c) the peanut meal without hulls, (d) the peanut meal bread with the addition of wheat flour. N.C.

Determining the nutritive value of hydrolized sawdust. Mass.

Feeding value of sunflowers according to maturity of the plant and methods of harvesting. Mont.

The nutritive value of soybeans and soybean products. Ohio.

A biological study of the nutritive value of the velvet bean. With special reference to its amino acid deficiencies and its content of fat soluble vitamin, water soluble vitamins and minerals. Ark. (A)

A study of the energy value of milk. Ill.

FEEDING STUDIES AND ANIMAL NUTRITION--Mineral Metabolism.

The influence of mineral matter on growth, fattening and reproduction.
Ala.

Mineral requirements of farm animals. Minn.

Mineral metabolism and mineral requirements of animals. Wis. (A)

To determine if manganese is or is not an essential element in animal metabolism, with particular reference to its connection with vitamins.
Ky. (A)

To determine if manganese, copper and zinc are or are not essential factors in reproduction and in animal metabolism, and if compounds of any of these elements can function separately or in combination as the so-called vitamins. Ky. (A)

The mineral requirements of laboratory animals on purified rations. Iowa.

Testing the feeding value of different mineral feeds. Mich.

Mineral supplements in dairy rations. Oreg. (A)

The influence of green feed upon the mineral metabolism of lactating animals. Ohio. (A)

Inorganic elements in animal nutrition. The specific rôle of the elements, potassium in particular, and the mineral equilibrium in dairy cows during lactating and dry periods. Oreg. (A)

The relative effect of rations based on timothy hay and clover hay on the mineral balance of dairy cows. N.Y. Cornell.

Food requirements for dairy cattle. Minn.

Mineral requirements for milk production. Ill.

The calcium balance of dairy cows. Iowa.

The value of inorganic calcium phosphate in the promotion of growth and milk production. Mass.

Factors influencing mineral metabolism in dairy calves. Studies of effects of ultra-violet light on mineral metabolism. Kans.

The effects of excessively acid ash with rations and excessively basic ash rations on the health and growth of calves. Mich.

FEEDING STUDIES AND ANIMAL NUTRITION--Mineral Metabolism. (Cont.)

The effect of a ration deficient in lime on calves. Mich.

The effect of mineral and organic acids upon the metabolism and growth of swine. Iowa.

The relation of rations low and rich in iron to the mortality of suckling pigs. Wis. (A)

Influence of quantity and proportions of the mineral elements in an otherwise unvarying ration, on growth and development of the chicken. Wis. (A)

Minerals and other supplements to the rations for adult fowls. N.J.

Calcium requirements of chickens. Wis.

Silage. (For silage feeding experiments, see under various ANIMAL HUSBANDRY headings. See also FIELD CROPS--Silage Crops.)

Silage investigation. Ark.

Forage crops investigations. Silage making methods. Oreg.

Methods of silage production at Churchville and Alfred, N.Y. (Dalton Substation) N.Y. Cornell.

Farm crops production investigations. Silage work. (Northeast Substation, Duluth) Minn.

Silage studies: Nature and extent of losses of nutrients in the silo. Changes occurring during fermentation. Ohio.

Silage investigations. Chemical and feeding tests of silages made from kafir stover, kafir fodder, cane stover, cane fodder, corn stover, and corn fodder. Kans.

The comparative feeding values of different kinds of silage.--To obtain data on the relative feeding values of silages made from different crops and the relative feed values of the crops per acre. N.Dak.

New varieties of silage. Reliability tests on the following silages: Wheat, horse beans, mesquite, wild cucumber, dog fennel, Alaska lettuce, Eureka clover, Tanglefoot peas, Hungarian vetch, mustard, tar weed, goat weed, Canada thistle and more thorough tests with ear corn silage for pigs. Oreg.

Microorganisms in silage and their pathological significance. Minn.

Evaluation of corn.--To formulate a method of assigning a price to corn silage. Ill.

FEEDING STUFFS AND ANIMAL NUTRITION--Silage. (Cont.)

Relative vitamin content of silage made from green corn stover to that made from dry stover. Mich.

Silage.--To determine the value of sunflower silage as a feed for farm animals. N.Dak.

Factors causing poor quality in sunflower silage in the lower Yellowstone Valley. Mont. (A)

Vitamin Studies. (See also Animal Nutrition.)

Studies of the relation of vitamins to nutrition, including requirements at different ages and other phases. Conn. State. (A)

Studies regarding the functions of vitamins in the animal body. Minn.

Studies on the chemical nature of vitamins A and B Minn.

The relative vitamin requirements of various species of animals and the effect of vitamin deficiency. Iowa.

Sources of vitamins in feed; the relation of pigments to animal nutrition; the stability of vitamins and their relation to growth and reproduction. Wis. (A)

Factors influencing the stability of vitamins in human and animal foods. Minn.

Studies in the quantitative requirements of laboratory animals for vitamins. Minn.

The effect on the eye of a deficiency of the fat-soluble vitamin. Conn. State. (A)

The relation of the chemical constitution of the diet to the development of rickets. Conn. (A)

To determine the effect of (a) sunlight, and (b) concentrated ultra-violet rays on the growth of chicks (1) on a complete diet, and (2) on a diet deficient in vitamin A. Ill. (A)

The effect of yeast upon the digestibility of feed. Okla.

The relation of vitamins to disease resistance. Iowa.

To find the causes of vitamin destruction in cooked and canned foods.--
To test the theory of oxidation as cause of vitamin C destruction. Mo.

A study of certain California foods and food products with respect to their content of vitamin C. Calif.

FEEDING STUFFS AND ANIMAL NUTRITION--Vitamin Studies. (Cont.)

Differences in the Vitamin / content of yellow and green beans. N.Y. Cornell.

An experimental study of the effect of various methods of canning carrots on their antiscorbutic properties. N.Y. Cornell.

Effect of corn silage on vitamin C potency of milk. S.Dak.

The vitamin content of certain nuts. Ala.

Experiments in feeding rats, using potatoes as the basis of the diet. N.Y. Cornell.

Differences in the antiscorbutic properties of yellow and red tomatoes. N.Y. Cornell.

A biological study of the nutritive value of the velvet bean, with special reference to its amino-acid deficiencies and its content of fat-soluble vitamin, water-soluble vitamins and minerals. Ark. (A)

The influence of soil fertility upon the vitamin B content of the wheat kernel. Ohio.

Vitamin requirements for growth and milk production of dairy cattle. Minn.

The relation of vitamins to the growth of dairy calves. Minn.

Vitamin B requirement of the dairy calf. Pa.

Sunlight in relation to the growth of calves. Kans.

The vitamin A content of fish meal, tankage, and slaughterhouse by-products used as supplements in swine rations. Ohio. (A)

The comparative nutritive value of white corn and yellow corn and the requirements of swine for vitamin A. Ill.

The effect of yeast in feeds and their utilization by fattening swine. Mo.

Studies in the nutrition of mature cockerels in confinement.--To determine whether, for the normal nutrition of mature cockerels, there exists a required ratio between protein and vitamin B. Ind.

Studies in the nutrition of mature cockerels in confinement.--To determine the persistence of the anti-scorbutic substance in the livers of cockerels after long intervals of a scorbutic diet. Ind.

Vitamins in relation to health and production capacity of fowls. N.J.

FEEDING STUFFS AND ANIMAL NUTRITION--Vitamin Studies. (Cont.)

The vitamin and mineral requirements of growing chicks. Ohio. (A)

The effect of minerals and vitamins on rate of growth in chicks. Iowa.

The growth of young chicks as affected by rations deficient in vitamin A. Ohio. (A)

Fat soluble vitamin requirements of growing chicks. Ill. (A)

Do growing chickens require a vitamin B supplement to a mixed grain ration? Ill. (A)

A study of the relative potency of different brands of pure medicinal cod liver oil in preventing leg weakness and in inducing rapid growth of baby chicks. N.Y. Cornell.

The value of yeast in poultry rations. N.Dak.

Poultry husbandry investigations. Feeding of yeast. (Northeast Substation, Duluth) Minn.

ANIMAL HUSBANDRY, GENERAL.

Miscellaneous.

Cattle breeding.--To test the feasibility of importing high-yielding cows from the North in comparison with cross-breeding of native types in founding a herd. Porto Rico.

Cattle breeding (development of improved station herd).--To develop a general purpose type of cattle suited to local conditions. Guam.

Cattle breeding (public improvement work).--To upgrade the native cattle of the island, improving the type in size, conformation and milking and beef qualities. Guam.

The grading up of South Mississippi native cattle by the use of pure-bred sires. (Coastal Plains Substation) Miss.

Age as a factor in animal breeding. Mo. (A)

Line breeding v. outcrossing. W. Va.

Artificial insemination in cattle. Del.

The value of minerals in mixed rations for swine, sheep, and cattle. Colo.

Grazing experiments with cattle, sheep, and swine to determine value per acre of alfalfa, yellow sweet clover, and white sweet clover for pasture. (Brookings and Cottonwood Substations) S. Dak.

Grazing studies. Idaho.

Feeding concentrates alone to ruminants. Mich.

Physiological variations in the temperature of cattle. Minn.

Shipping shrinkage of livestock.--To determine the losses from shipping, to learn the causes, and to ascertain the means of reducing these losses to a minimum. N.Dak.

Meat investigations. Iowa.

Livestock studies. (Delta Substation) Miss.

Miscellaneous animal husbandry observations. Mont.

ANIMAL HUSBANDRY, HORSES AND MULES.

Breeding.

Horse breeding. Wyo.

Breeding experiments with horses and mules. S. C.

Improvement of native horses.--To improve or upgrade the native horses of the island with the view of ultimately evolving a type of horse best suited to local conditions. Guam.

Cost of Production. (See RURAL ECONOMICS--Cost of Production and Accounting.)

Feeding.

Wintering idle brood mares in blue grass pasture supplemented with oat straw and limited grain ration. Mo.

Effect of balanced and unbalanced rations on work mules. Miss.

Food required for raising colts. N.Y. Cornell.

Feeding purebred draft fillies from weanlings to two-year-olds. Ill.

Growing draft colts. Mo.

Horse production. A study of preparation of feeds and the value of minerals in raising draft colts. Iowa.

Alfalfa for horses. Mich.

Silage for raising colts. N.Y. Cornell.

A study of the growth of draft horses of different breeds.--To secure data on the rate and manner of growth of draft horses from birth to maturity. N.Dak.

ANIMAL HUSBANDRY, BEEF CATTLE.

General.

The introduction of purebred beef cattle. Ky.

Investigations in cattle raising. (Northeast Demonstration Farm, Duluth) Minn.

Beef cattle. Maintenance of herd. (North Platte Substation) Nebr.

ANIMAL HUSBANDRY, BEEF CATTLE--General. (Cont.)

Beef production investigations.--To secure information covering the organization and operation of cattle production as a separate farm enterprise and its relation to the farm business as a whole. Ill.

Production of beef cattle.--To determine the success with which high grade beef cattle can be produced under blackland conditions. (Wenona Substation) N.C.

Cost of production and method of breeding, feeding, care and management of baby beef. N.Dak.

Beef cattle production in Missouri. Mo.

The effect of quality in beef cattle, and economical production. Okla.

Dressed beef record. Yield, color, conformation, and grade of dressed beef. (Union Substation) Oreg.

Dressed beef record. Shrinkage in live weight during shipment. (Union Substation) Oreg.

Breeding.

Experimental analysis of the heredity factors determining milk and meat production in cattle. Wis. (A)

Beef cattle breeding. Utah.

Breeding experiments with purebred Shorthorn cattle.--To establish a dual purpose type of greater beef tendency than is now characteristic of the milking Shorthorn without sacrificing milk production. (Jackson Substation) Tenn.

Beef cattle. Building up a grade herd from native stock and purebred Angus, Hereford, and Shorthorn bulls. Miss.

Purebred cattle experiment.--To build up a herd of purebred cattle of the Shorthorn beef type. (Langdon Substation) N.Dak.

Age of breeding range cattle. A study of the influence of age of breeding upon the development of dam and offspring in beef cattle. (Fort Hays Substation) Kans.

Cost of Production. (See RURAL ECONOMICS--Cost of Production and Accounting.)

ANIMAL HUSBANDRY, BEEF CATTLE--Feeding Experiments, General. (See also FEEDING STUFFS AND ANIMAL NUTRITION.)

Methods of managing and feeding a purebred beef herd. Wash.

Growing beef cattle. W.Va.

The maintenance of a beef cattle breeding herd with silage made from the stover of shocked corn as the basis of the winter ration and sweet clover pasture as the basis for summer maintenance. Ill.

Winter feeding of beef cattle. (North Montana Substation) Mont.

Wintering beef cows. A comparison of stover silage, dry stover, and corn silage. Ohio.

Steer feeding. W.Va.

Steer feeding experiments. (Worland) Wyo.

Steer feeding investigations. (Caldwell Substation) Idaho.

Steer feeding investigations. Ky.

Growing and fattening steers. W.Va.

Fattening cattle. Iowa.

Rations for fattening steers. Pa.

Steer feeding.--To compare the gains made by fattening steers fed on different rations. Utah.

Fattening thin range cattle for market. Ariz.

Age, breed, and ration as factors in steer feeding. Tex.

Age as a factor in the feed lot (with steers). Ariz.

Fattening cattle.--To ascertain the effect of age upon the rate and economy of gain in cattle. Nebr.

Steer feeding.--To compare the profitableness of calves v. yearlings v. two-year-olds; rations with v. without protein supplements. Ohio.

The economic utilization of home-grown feeds in fattening beef cattle. (Brosser Irrigation Substation) Wash.

The use of native grown feeds for wintering beef animals. (Coastal Plains Substation) Miss.

ANIMAL HUSBANDRY, BEEF CATTLE--Feeding Experiments, General. (Cont.)

Winter feeding experiments with range cattle. Trials of various rations of western Kansas-grown feeds. (Fort Hays Substation) Kans.

Beef production. Study of winter feeding of beef steers. Mont.

A comparison of different summer rations for fattening steers. Ill.

Fattening cattle in winter. Relative value of protein supplements. Iowa.

Limited grain rations for fattening cattle of different ages. Mo.

Fattening steers.--To secure data on the feeding of limited grain rations to fattening steers; to study the value of corn and soybean silage as compared with corn silage and the value of the soy bean in the silage as a substitute for cottonseed meal as a source of protein supply for fattening steers. Ind.

Short feeding cattle.--To study the economy of carrying grass cattle beyond the grass fat condition; to determine the gain possible with bunk or rack feeding in the open yard with corn fodder and ensilage, respectively; to learn the feasibility of sheltering such cattle in a straw shed; to study the feeding and feed value of sunflower ensilage and sweet clover ensilage; to determine the effect of a light grain supplement to ensilage rations. N.Dak.

Ration experiments with steers: (a) To determine the value of an acre of beet tops. (b) To compare three ways of utilizing tops as a cattle feed--(1) pastured in the field; (2) dried and hauled to the lot; (3) fed as beet top silage. (c) To determine the comparative effect of feeding beet tops v. wet pulp with alfalfa in a preliminary test with cattle. (d) To compare wet pulp, beet top silage, and corn silage when fed with alfalfa hay. (e) To compare dried molasses beet pulp with wet beet pulp and molasses when fed with cottonseed cake and alfalfa. (f) To find a satisfactory ration for feeding beet top silage. (g) To compare wet pulp and corn silage. (h) To determine an economical utilization of dried molasses beet pulp. Colo.

Alfalfa hay and corn silage for fattening cattle. Hay and silage with oil meal or with corn. Ohio.

Alfalfa versus clover hay for fattening steers. Wis.

Fattening steers--2 year-olds: (a) Alfalfa hay alone; (b) alfalfa hay and silage; (c) alfalfa hay and 5-lb. rolled barley. (Union Substation Oreg.

ANIMAL HUSBANDRY, BEEF CATTLE--Feeding Experiments, General. (Cont.)

Fattening steers--3-year-olds: (a) alfalfa hay alone; (b) alfalfa hay and silage; (c) alfalfa hay, silage and 5-lb. rolled barley; (d) alfalfa hay and 5-lb. rolled barley; (e) peas and barley hay and silage. (Union Substation) Oreg.

The feeding value of sweet clover hay for beef cattle. (Northwest Experiment Farm, Crookston) Minn.

Growing steers--winter rations. (a) Straw and cottonseed cake. (b) Straw and limited hay allowance. (c) Alfalfa hay with both peas and barley and sunflower silages. (d) Alfalfa hay--full, medium, and light feeds. (e) Alfalfa hay and silage--full, medium, and light feeds. (Union Substation) Oreg.

Steer-feeding experiments. All lots receiving cottonseed meal with varying amounts of corn and different roughages. Miss.

A study of the relative value of ground soy beans, soybean oil meal, and cottonseed meal as nitrogenous concentrates for fattening mature feeder steers in dry lot on short heavy feed. Ill.

Fattening steers.--A comparison of soybean hay and clover hay. Ind.

Soybean oil meal versus cottonseed meal.--To determine the relative value of new process soybean oil meal and cottonseed meal when fed with a basal ration of ground corn, corn silage and alfalfa hay. Ill.

Fattening steers.--A comparison of rations containing cottonseed meal with those without cottonseed meal. Ind.

Fattening steers.--A comparison of soy beans, soy beans and mineral, soybean oil meal and cottonseed meal as supplements to rations of corn, clover hay, and corn silage. Ind.

Value of rye for fattening cattle. S.Dak.

Silage feeding investigations. Methods of securing maximum utilization of silage in beef cattle feeding. Studies of effects of feeding varying quantities of cottonseed meal with silage. Kans.

Fattening steers on sumac silage, sumac fodder and cottonseed hulls supplemented with ground milo heads and cottonseed meal. Tex.

Feeding experiments with velvet bean feed with cows and calves. Ky.

Molasses in rations for fattening yearling cattle. Mo.

ANIMAL HUSBANDRY, BEEF CATTLE--Feeding Experiments, General. (Cont.)

Wintering and finishing calves. Okla.

Minerals for beef calves. Ohio.

Fattening yearling steers on dry farms. Ariz.

Feeding yearling steers.--To determine the relative efficiency of sumac silage and sumac fodder as roughage for fall fed steers in winter time, and the relative efficiency of cowpea hay and cottonseed meal as nitrogenous supplements. N.Mex.

Baby beef production. S. Dak.

Baby beef--feeding and grazing experiment. (Columbia Substation)
Tenn.

Cost of production and method of breeding, feeding, care, and management of baby beef. N.Dak.

Baby beef growing and fattening. Iowa.

Baby beef fattening. To ascertain the advantages of using various rations and to compare steer and heifer calves. Nebr.

Sunflower silage for baby beef. Mont.

Beef cattle investigations.--Finishing baby beef. Mich.

Finishing baby beef. Okla.

The value of several rations for baby beef production. Minn.

Grazing and Range Experiments.

Range cattle experiment. (Davis and Shingle Springs Substations)
Calif.

Grazing records with steers. (a) The effect of winter rations upon the gains made while in the yards and on summer range. (b) Final weight at time of marketing. (c) Cost of production. (Union Substation) Oreg.

Cattle grazing trial.--To determine the carrying capacity and the effect of sweet clover pasture on cattle. N. Dak.

ANIMAL HUSBANDRY, DAIRY CATTLE.

General.

Dairy studies. (Holly Springs and South Mississippi Substations) Miss.

The relation of dairy type to milk production. Pa.

Sex type as related to functional development in Shorthorn cattle.

Studies of the relation of form to quantity of milk and character of calves. Kans.

Maintenance of the dairy herd. Wyo.

The economic production of Great Plains dairy cows. N.Dak.

The breeding and feeding of the dairy herd. (Union Substation) Oreg.

A study of the herd records of four dairy breeds, with reference to feed, total milk, solids, and fat. Conn. Storrs.

Record of the station herd. Mass.

Temperature variation (in dairy cattle). Mich.

Studies of color pigmentum in the skin of dairy cattle. N. J.

Factors influencing the alkaline reserve of dairy cattle. Mich.

The alkaline reserve of the blood of dairy cattle under ordinary farm conditions. Mich.

Growth studies of dairy animals. Md.

Standards of growth for dairy cattle. Mo.

A study of the normal growth of dairy cattle. Idaho.

A study of the growth of dairy heifers. Ky.

Normal growth of dairy heifers. N. J.

Normal curve of growth of dairy heifers. Oreg.

Growth and development of dairy calves. Okla.

A study of weight in dairy cattle. Nebr.

ANIMAL HUSBANDRY, DAIRY CATTLE--General. (Cont.)

Weights and measurements of dairy cattle. Mich.

Weight of dairy cattle as influenced by pregnancy, age, and methods of handling. Idaho.

The protection of dairy cattle from flies. Okla.

Repellant sprays for flies on dairy cattle.--To determine the relative effectiveness, cost, and general feasibility of promising repellant fly sprays, and the practical value of spraying. Ind.

Breeding. (See also GENETICS.)

The study of the inheritance of characters in dairy cattle in a cross-bred Guernsey-Holstein herd. Ill.

The mode of inheritance of milk production and associated characters in cattle. Me. (A)

Dairy herd management. Line v. crossbreeding. N. Y. State.

Line breeding v. outcrossing (Dairy). W. Va.

Line breeding of Holsteins. S. C.

Breeding experiments with dairy cattle. A comparison of line breeding with outcrossing, and inbreeding with outcrossing, in the breeding of dairy cattle. N. J.

A crossbreeding experiment with dairy cattle. S. Dak.

Constructive breeding of dairy cattle. Tex.

Improvement of the station dairy herd. Del.

Influence of feed, environment, and breeding on native unimproved cows and their offspring, as regards development of milk-producing qualities, composition of milk, digestive capacity, and utilization of feed in dairy and beef production. Iowa. (A)

Breeding-up experiment with dairy cattle. S. Dak.

Cattle breeding.--To determine the best method of developing a strain of dairy cattle adapted to Great Plains conditions.--To study a co-operative breeding enterprise and to determine feasible means of procedure. N. Dak.

ANIMAL HUSBANDRY, DAIRY CATTLE--Breeding. (Cont.)

Breeding experiments with dairy cattle.--To determine the method of breeding that will best fix and insure the transmission of high production in dairy cattle. Calif.

Grading-up demonstration.--To demonstrate by the use of purebred sires on common and on grade cows the extent to which the production of dairy herds may be increased and how long it will take to "grow" a dairy herd. N. Dak.

Management of dairy herd. Breeding for type and production. A study of the effect of using purebred Guernsey sires upon a herd of grade dairy cows. (North Central Substation, Grand Rapids) Minn.

Breeding for milk production.--To breed up a herd of dairy cows that will produce more milk than the native cows and manage them so that the cows can be milked twice daily, independent of the calf. Virgin Islands.

Herd development work.--To develop a high-producing Jersey herd by the use of proven sires. N.C.

The development of a self-supporting purebred Holstein herd. (Hettinger Substation) N.Dak.

Breeding purebred Holsteins.--To ascertain if Holstein-Friesians are adapted to Alaska or if they can be acclimated to Alaskan conditions. (Kodiak Substation) Alaska.

Breeding milking Shorthorns.--To ascertain how they are adapted to the climate of interior Alaska. (Matanuska Substation) Alaska.

Breeding purebred Galloway cattle.--To demonstrate whether or not Galloways are adapted to the Alaska climate. (Kodiak Substation) Alaska.

Breeding yak.--To learn their adaptability to cold weather conditions of northern Alaska. (Fairbanks Substation) Alaska.

Crossbreeding yak and Galloway.--To establish a bovine breed which shall be as hardy as the moose for northern Alaska. (Fairbanks Substation) Alaska.

Crossbreeding Galloways and Holsteins.--To develop a distinctly Alaskan dairy breed suited to the conditions. (Kodiak Substation) Alaska.

Testing dairy sires. Ill.

ANIMAL HUSBANDRY, DAIRY CATTLE--Breeding. (Cont.)

The transmitting ability of dairy sires, as indicated by the records of their daughters. Ill.

The value of purebred dairy sires and the cost of milk production. Okla.

A study of the prepotency of the bulls used in the dairy herd. S.C.

Virility in herd sires. Promotion of virility through feeds and exercise. Oreg.

The breeding ability of bulls (dairy). Wash.

Difficult breeding in cows and heifers. Promotion of breeding through feeds. Oreg.

Transmitting qualities of Holstein-Friesian dams for milk and butterfat production. Del.

Calves and Heifers.

A study of (dairy) calf rations and normal growth in calves. Wash.

Winter rations for young dairy stock in Idaho. Idaho.

Winter rations for dairy heifers. Ky.

Economical winter rations for dairy heifers. Oreg.

Feeds for wintering dairy heifers under practical farm conditions in Idaho. Idaho.

To determine the most economical ration for wintering dairy heifers under New Jersey conditions. N. J.

A study of the value of different rations for dairy heifers.--To determine the relative value of rations for dairy heifers for winter feeding, when the ration is made up of various roughages with and without grain. Ind.

Experiments in calf feeding. Ky.

Comparison of feed for (dairy) calves. Iowa.

A study to determine the feed required and the cost of raising dairy calves. S. C.

ANIMAL HUSBANDRY, DAIRY CATTLE--Calves and Heifers. (Cont.)

Influence of nutrition of heifers and the age of breeding upon their subsequent development. Protein requirements for growth. Mo. (A)

Value of various protein supplements for young dairy heifers. Comparison of alfalfa, bran, cottonseed meal, and oil meal as protein supplements in the feed of calves. Kans.

Legumes for growth of dairy calves. Ohio.

Peanut meal vs. cottonseed meal for maturing heifer calves. To determine the relative value of peanut meal as compared with cottonseed meal as a protein carrier for developing dairy heifers. (Coastal Plain Substation) N.C.

Calf feeding.--To determine the practicability and economy of substituting soy bean meal for linseed oil meal in the ration of the dairy calf. Ind.

A study of the best methods of feeding calves while receiving milk. Idaho.

Raising calves with the minimum amount of milk. (Dairy). Minn.

Minimum milk requirement for raising dairy calves. N.J.

Rations for dairy calves (a) limited amount of whole milk or skim milk, (b) when as a substitute for skim milk, (c) value of semi-solid buttermilk and dried skim milk for calf feeding, (d) importance of ample water supply for calves. Wis.

Relative value of whole milk and skim milk for calves when supplemented with a free choice of six feeds in self feeders and alfalfa hay ad libitum. S. Dak. (A)

Skim milk versus grain for dairy calves. Wyo.

Powdered milk as a feed for calves. Md.

Effect on mature cows of feeding calf meal, skim milk, and whole milk during the first six months of age. To determine whether the growth and milk-producing ability of dams and vigor of offspring is affected by feeds consumed during the first six months of age. Is impetus for growth affected by these feeds? Can stunted calves be brought to normal size by liberal feeding? Ind.

Attempting to secure a substitute for milk in the growing of young calves. Mass.

ANIMAL HUSBANDRY, DAIRY CATTLE--Calves and Heifers. (Cont.)

Substitutes for milk in feeding dairy calves. Ariz.

A calf meal gruel for the rearing of calves. A study to establish a formula of proved value for a milk substitute; and to determine the general principles, chemical, physical, and physiological, on which the formation of a substitute must be based. N. Y. Cornell.

The relation of vitamins to the growth of dairy calves. Minn.

Minerals for dairy heifers. Ala.

Mineral supplements for dairy heifers and for dairy cows. Wis.

Study of the self-feeder in the feeding of yearling heifers. W. Va.

A study of colostrum with special reference to the effect of heat (pasteurization) on its physico-chemical, bacteriological, immunological, and nutritional changes. Mo. (A)

Cost of Production. (See RURAL ECONOMICS--Cost of Production and Accounting.)

Feeding Experiments, General. (See also FEEDING STUFFS AND ANIMAL NUTRITION.)

Studies in feeding milk cows. Okla.

Maintenance ration for dairy cows. Vt. (A)

Dairy herd management. Individual feed requirements. N. Y. State.

Wide and narrow rations for dairy cows. Ohio.

Food requirement for growing dairy cattle. Energy requirements for growth. Minn.

A study of the value of feeding grain with hay and silage for milk production. Idaho.

The value of feeding grain to dairy cows during the dry rest period. Idaho.

A comparison of grain feeding with no grain feeding of dairy cows on native pasture. (Colby Substation) Kans.

Influence of feeding grain to cows on pasture. Miss.

ANIMAL HUSBANDRY, DAIRY CATTLE--Feeding Experiments, General. (Cont.)

Dairying. A comparison of milk production while grazing on summer pasture, with and without grain supplements. (Union Substation) Oreg.

Home-mixed v. ready-mixed feeds for the dairy.--To determine the value of ready-mixed feeds that are on the market compared with the home-grown and home-mixed feeds, special attention being given to the feed cost of milk production. (Coastal Plain Substation) N. C.

A comparison of home-grown and purchased feedstuffs for economical milk production. Fla.

Rations for North Dakota dairy herds.--To determine the relative value of home-grown rations for dairy cows. N. Dak.

Roughage as a feed for dairy cows. Nebr.

Value of cutting or chopping hay for dairy cows. Wis.

Comparison of eastern Oregon with western Oregon alfalfa hay for dairy cows. Oreg.

Alfalfa v. native hay for milk production. Wyo.

Soybean hay v. alfalfa hay for dairy cows. Wis.

A comparison of the milk-producing qualities of soybean hay and alfalfa hay. W. Va.

The comparative value of various silages for milk production. Idaho.

A comparison of corn silage and sorghum silage for milk production. S.C.

Management of dairy herd. Dairy cattle feeding. A comparison of corn versus sunflowers for silage feed for dairy cows.. (North Central Substation, Grand Rapids) Minn.

The use of sunflowers as a silage crop for dairy cattle feeding. Ill.

Sunflower silage with other roughage for dairy cows. Mont.

A study of sunflower silage as feed for dairy cattle. W.Va.

Soiling crops versus corn silage as a substitute for pasture in summer feeding of dairy cows. Idaho.

Dairy investigations. Effect of summer soiling on milk production. (Astoria Substation) Oreg.

ANIMAL HUSBANDRY, DAIRY CATTLE--Feeding Experiments, General. (Cont.)

Development of a soiling crop system for summer soiling for dairy cows. (Astoria Substation) Oreg.

Soiling experiments with dairy cows, using alfalfa, clover, corn, and sunflowers. Mont.

Napier and Guatemala grasses as soiling crops for milch cows. To determine the comparative value of Napier and Guatemala grasses as a green feed for milch cows. Guam.

Pasture versus silage for dairy cows in summer.--To determine whether it is more economical to feed the dairy herd on silage or to pasture it during the summer season. N.Dak.

Experiments with dairy cows. Pasture tests. (Huntley Substation) Mont.

Acre value of pasture for dairy cows. Colo.

Dairy pasture experiments.--To determine (a) the extent to which different mixtures of biennial and perennial pasture crops are preferred by dairy animals, (b) which single crop or mixture establishes itself most efficiently under grazing, (c) the survival and rate of increase of broom grass and blue grass in competition with others, and (d) the comparative value of alfalfa, sweet clover, Sudan grass and other grasses. N.Dak.

Supplementing blue grass pasture for milk production.--To determine the value, for summer milk production, of supplementing grain or grain hay silage to blue grass pasture. Ind.

A test of Sudan grass as a pasture for dairy cows. (Colby Substation) Kans.

Feeding and pasturing experiments with dairy cattle. Pasturing tests with Sudan grass, feeding tests with Sudan hay, alfalfa hay, and cane hay. (Fort Hays Substation) Kans.

A comparison of Idaho pasture crops for milk production. Idaho.

The use of succulent feeds for milk production. Iowa.

The determination of the most economical carbohydrate concentrate to balance the dairy ration in the South. S.C.

Testing the feeding value of cull beans (with dairy cattle). Mich.

ANIMAL HUSBANDRY, DAIRY CATTLE-Feeding Experiments, General. (Cont.)

Feeding trials with dairy cows. Cocoa and other feeding stuffs. The feeding value of cocoa for dairy cows, swine, and poultry. Vt.

Feeding dairy cattle. Comparison of the feeding value of (a) ground Hegari with rolled barley, and (b) cane fodder with cane silage, for milk production. Ariz.

The effect of peanut meal when fed to dairy cows on the qualities of the butterfat and methods by which this feed may be fed without undesirable effects. Ca. (A)

Feeding of minerals to dairy cows. Ohio.

The relative value of bone meal and raw rock phosphate as sources of calcium and phosphorus when used as mineral supplements to the ration of dairy cows. Mich.

The self-feeder for dairy cows. Ill.

Herd Management.

Dairy farm management.--To encourage the introduction of dairying as a type of farming for this area of the State. (Caldwell Substation) Idaho.

Dairy herd management and improvement. (Valentine Substation) Nebr.

Dairy investigations. Herd improvement and management under coast conditions. (Astoria Substation) Oreg.

The dairy herd. Maintenance and management. (North Platte Substation) Nebr.

Dairy herd management. Breeding and feeding practices. N. Y. State.

Maintenance and management of purebred Holsteins. (Hettinger Substation) N. Dak.

Dairy farm management.--To determine the proper number of animals to be maintained on an 80-acre unit of land and their proper management. (Caldwell Substation) Idaho.

Dairy farm management.--To determine the best combination of crops to be grown for a dairy herd. (Caldwell Substation) Idaho.

ANIMAL HUSBANDRY, DAIRY CATTLE--Herd Management. (Cont.)

To determine the relation of various dairy practices and clean market production and to find a practical dairy procedure which may be applied to the average farm. Mich.

Milking Machines.

Testing the efficiency and practicability of cleaning and caring for milking machines. Conn. Storrs.

Study of application of methods of sterilizing milking machines to farm conditions. N. Y. State.

Dairy utensil flora studies: (a) Bacterial flora of milking machines; (b) types of bacteria which survive pasteurization. N. Y. State.

Effect of methods of washing separators on the bacterial content of cream and skim milk. S. Dak.

Milk Secretion and Production.

Experimental analysis of the heredity factors determining milk and meat production in cattle. Wis. (A).

Physiology of milking. Study of the nervous and contractible mechanisms involved in milking and bearing on milking, especially machine milking. Ill.

Synthetic capacity of the mammary gland. Wis.

The relation of ductless glands to growth and milk production. N.J.

Investigations into causes of variation in milk and fat production. Iowa.

Factors influencing the composition of milk. Studies in milk secretion: (a) time relations in milk secretions, (b) mechanisms regulating variations in the composition of milk. Mo. (A)

A study of the factors influencing seasonal variations in the quality of milk. Md.

A study of the effect of climatic conditions upon the production of milk.--To determine the effect of changes in temperature, humidity, and other climatic conditions upon the production of milk. (Coastal Plain Substation) N. C.

ANIMAL HUSBANDRY, DAIRY CATTLE--Milk Secretion and Production. (Cont.)

Effect of air temperature on percentage of butterfat in milk. Ariz.

A study of the variation in milk production and in butterfat during the entire lactation period of individual cows. W. Va.

Curves of the normal production of Holstein-Friesian cows at different ages. A study of normal production in three herds in Wisconsin, Illinois, and New York. N. Y. Cornell.

Milk production of Virgin Island cows.--To determine the average milk production, percentage of butterfat and lactation period of cows of the native Virgin Islands type under local methods of management. Virgin Islands.

Relation of fat content and yield of milk.--To determine: The relation to yield; the relation to cost; the bearing on inheritance problems; and the bearing on 7-day records. Ill.

Factors in economy of milk production. Okla.

Late v. early fall calving in the dairy herd.--To determine the best season of the year for the dairy cow to be in the lactation period. Miss.

Comparing the production record of cows (a) influence of season of freshening, (b) influence of length of season, (c) influence of gestation, (d) influence of frequency of milking, (e) influence of age. Ill.

The effect of incomplete milking upon milk yield and composition. Ill.

Relation of age of dam to quality of offspring. A statistical study of milk yields, in dairy cattle, of daughters from young cows in comparison with those of daughters of same cows when older. Ill.

Dairy investigations. Effect of grain upon milk and butterfat, when cows are on pasture. (Astoria Substation) Oreg.

The effect of peanut meal when fed to dairy cows on the qualities of the butterfat and methods by which this feed may be fed without undesirable effects. Ga. (A)

Determination of how the feeding of peanut meal affects the melting point of butterfat in milk. Fla.

Determination of how the feeding of velvet beans affects the melting point of butterfat in milk. Fla.

A study of the relation of water supply to milk flow. Md.

ANIMAL HUSBANDRY, DAIRY CATTLE--Milk Secretion and Production. (Cont.)

Studies of "fat soluble A" vitamin as present in the milk of the four dairy breeds. Nebr. (A)

Factors influencing the vitamin content of milk. Minn.

Effect of diseases in the cow on milk.--To determine the rôle played by milk both in the spread of disease in cattle and causation of unfavorable symptoms of diseases in man. Mich. (A)

Official Testing and Inspection.

Certified dairy inspections. (Berkeley, San Anselmo, Knightson, and Dixon Substations) Calif.

Supervision of dairy cows' records. Colo.

Official testing for advanced registry or register of merit in the State of Idaho. Idaho.

Official dairy testing. (North Central Substation, Grand Rapids) Minn.

Official testing of dairy cows. Mo.

Official dairy testing work. N. C.

Official testing of dairy cows in the State. S. C.

Official testing. Wash.

A compilation of the results obtained through the purebred bull associations. Md.

Protein Supplements for Dairy Cattle.

The protein and energy requirements for milk production: (a) Protein requirements for milk production; (b) the effects of high and low protein rations on milk production, metabolism, and growth of the animal. Va. (A)

Tests of 32 per cent mixed rations for balancing home feeds v. 24 per cent mixed rations. Md.

Experiment to determine whether alfalfa meal, when fed to dairy cows, causes garget. N. J.

ANIMAL HUSBANDRY, DAIRY CATTLE--Protein Supplements for Dairy Cattle. (Cont.)

The feeding value of cottonseed meal and hulls for dairy cattle fed with various supplements for effect on maintenance, breeding, pregnancy, parturition, lactation, and on the living young calves. N.C.

Dairying. The value of ground flaxseed as a home-grown protein concentrate in winter rations. (Union Substation) Oreg.

The value of ground soy beans for milk production. Ohio.

A study of the use of soybean oil meal, soybean hay, and soybean straw for dairy cattle. Ill.

Relative value of soybean hay as compared to alfalfa hay as a protein supplement for dairy cows for milk production, together with the effect on the composition of butterfat and butter. S. Dak.

ANIMAL HUSBANDRY, SHEEP AND GOATS.

General.

Sheep experiments. (Coastal Plains Substation) Miss.

Farm sheep management. (Caldwell and Sandpoint Substations) Idaho.

Sheep management in southwest Virginia. Va.

Management of range sheep. Mont.

Sheep. Efficiency of flock experiment.--To determine the efficiency of two- and three-year-old flocks as compared with four- and five-year-old flocks of sheep. (Lengdon Substation) N. Dak.

Methods of managing and feeding the farm flock of purebred sheep. Wash.

Sheep and wool investigations. Ky.

Survey of the sheep industry and correlation of factors influencing the raising of sheep. Md.

Effect of various factors upon the wool and form of sheep. Mont. (A)

A study of the secretion of the sebaceous and sudoriparoces glands in Rambouillet sheep. (Davis Substation) Calif.

ANIMAL HUSBANDRY, SHEEP AND GOATS--General. (Cont.)

An economic study of shearing sheep once v. twice a year. Tex.

Breeds and Breeding.

Inheritance of fleece characters in purebred and crossbred sheep.

Breeding sheep for wool production. Wyo. (A)

Inheritance of the fur qualities of Karakul sheep. Tex.

Sheep breeding to develop a fur-bearing sheep by using Karakul blood. S. Dak.

Sheep breeding problems. (Davis Substation) Calif.

Breeding efficiency of sheep. Oreg.

Sheep breeding.--To determine the principles involved in fixing certain characters in sheep. N.H. (A)

Sheep breeding with a view of eliminating the tail. S. Dak.

Sheep breeding.--To ascertain the adaptability of long-wooled sheep to Alaska. (Matanuska Substation) Alaska.

The value of a purebred ram. Okla.

The introduction of purebred sheep. Ky.

Sheep breeding experiments to build up a flock of high class grades from native and grade ewes, using purebred Shropshire and Southdown rams. Miss.

Purebred sheep experiment.--To develop a purebred flock of Hampshire sheep. (Langdon Substation) N.Dak.

Grade sheep experiment. The use of purebred Hampshire, Oxford, and Southdown rams with grade Montana ewes, to compare the lambs in the different crosses. (Langdon Substation) N.Dak.

A study of crossbreeding Merino ewes with mutton rams. Pa.

Tests with different breeds of sheep. S. C.

Comparison of Southdown, Shropshire and Cheviot rams for production of market lambs when used on native ewes. W. Va.

ANIMAL HUSBANDRY, SHEEP AND GOATS--Breeds and Breeding. (Cont.)

Lamb production: Methods of producing more and better lambs in Nevada range flocks. (a) Use of better bucks, (b) saving bummer lambs, (c) feeding concentrates to ewe bands in winter on the open range, and (d) feeding ewes which lamb under shelter to secure a richer and more abundant milk supply. Nev.

To determine the number of ewes per ram for optimum early spring lamb production. Tenn.

A study of the adaptation of the Corriedale sheep to southwestern Texas. (Sonora Substation) Tex.

Ewes, Feeding and Maintenance.

Sheep feeding experiments. (Worland) Wyo.

Sheep feeding investigations. Okla.

Winter maintenance of breeding ewes. Colo.

Wintering pregnant ewes. Iowa.

Winter rations for breeding ewes. Ohio.

Wintering ewes. Rations before lambing of alfalfa hay, alone and with silage; and after lambing of alfalfa hay, alone or with grain or silage. (Union Substation) Oreg.

Studies in sheep production. Feeding breeding ewes. Mont.

Investigations in feeding pregnant ewes. Ky.

Pasturage and silage production for sheep. Study of various mixtures of grasses and clovers; of the effect of grazing upon cultivated grasses under controlled conditions; and of the most desirable methods of planting and irrigating Russian sunflowers. Nev.

Proportion of roughages to concentrates in the winter rations of breeding ewes. Ohio.

The value of legume hays and straws for wintering the breeding flock. Wash.

Soybean hay and alfalfa hay as roughages in the winter rations of breeding ewes. Ohio.

ANIMAL HUSBANDRY, SHEEP AND GOATS--Lambs, Feeding and Fattening.

Lamb feeding investigations. (Caldwell Substation) Idaho.

Rations for fattening lambs. Colo.

Feeding western lambs. Tests of various rations for finishing. Kans.

The economic utilization of home grown feeds in fattening lambs.
(Prosser Irrigation Substation) Wash.

Fattening range lambs in the dry lot. Iowa.

Growing winter rations for ewe lambs. Idaho.

A comparison of western lambs, native Ohio mutton lambs and native Ohio fine wool lambs as feeders. Ohio.

Feeding and finishing range ewes and lambs: (a) Feeding old ewes;
(b) pasturing lambs before shipment in the autumn. Nev.

Fattening western lambs.--To compare (a) limited with full feeding of corn, (b) clover hay and oats straw as roughage fed with corn, corn silage and cottonseed meal, and (c) restricted and liberal feeding of cottonseed meal and linseed meal as supplements to rations composed of corn, corn silage, and dry roughage. Ind.

Rations for fattening lambs.--To ascertain the advisability (a) of adding ensilage to a corn and alfalfa ration, (b) of feeding molasses meal both with and without ensilage, and (c) of feeding oil meal both with and without ensilage. Nebr.

Fattening western lambs.--(a) To compare hand feeding with self-feeding of concentrates for fattening lambs, (b) to secure information as to the value of soybean oil meal and soy beans with a mineral mixture as supplement to rations for fattening lambs, (c) to secure the comparative value of ear corn and shelled corn for fattening lambs, and (d) to compare the value of soybean hay v. clover hay. Ind.

A study of the comparative gain and economy of gain made by lambs fattened on the grain sorghums v. corn. (At Spur) Tex.

Lamb fattening. Different grains used to determine relative value.
(Hermiston Substation) Oreg.

ANIMAL HUSBANDRY, SHEEP AND GOATS--Lambs, Feeding and Fattening. (Cont.)

A study of the value of certain grains and seeds occurring in grain screenings for fattening lambs.--To secure data on the quantities of the different seeds in North Dakota crops and on the value of the various grains and seeds in screenings as a large part of the concentrates in a ration for fattening lambs. N. Dak.

Linseed meal v. whole soy beans v. cracked soy beans as a protein supplement to corn in the ration for fattening Delaine-Merino lambs. Ohio.

Fattening lambs for market on different rations of feed. Comparing whole, rolled, and ground barley. (Davis Substation) Calif.

Alfalfa hay and soybean hay in the winter ration for developing Delaine-Merino lambs. Ohio.

Lamb feeding investigations.--To determine the feasibility of feeding late native lambs for the market. Ky.

Forage crops for lambs. S. Dak.

Value of hay and pasture for carrying lambs for late high markets. (Hermiston Substation) Oreg.

Pasture yields for lambs. Oreg.

Alfalfa-barley pasture for fattening lambs. Ariz.

Fattening western lambs on the corn field. Ohio.

"Sheeping-down" corn and other crops. Iowa.

Rape v. blue grass as summer forage crops for Delaine-Merino lambs. Ohio.

The soybean crop for fattening western lambs. Ill.

To determine the cost in feed and pasture of raising spring lambs, and the relative values of the different types of management. Oreg.

Cost of raising lambs to marketable age.--To determine the cost of raising high class market lambs to marketable age and condition, using a purebred Hampshire ram and high grade ewes of Shropshire and Merino blood. (Statesville) N. C.

ANIMAL HUSBANDRY, SHEEP AND GOATS--Lambs, Feeding and Fattening. (Cont.)

Hothouse lamb production. Pa.

Effect of castration and docking upon gains and market prices of male and ewe lambs. Tenn.

Comparative method of docking and castrating lambs. Pa.

Wool.

Wool investigations. Ky.

A study of the inheritability of wool by market grades.--To secure data on the market grades of wool produced by different individuals and breeds in the college flock and compare with the grades produced by sires and dams. N. Dak.

Grades and shrinkages of representative samples of Texas wool and mohair. Tex.

Wool and lambing record. Effect of rations on body weight and wool production of ewes; birth weight, growth, and final development of lambs.. (Union Substation) Oreg.

Goats.

Inheritance of horns, wattles, and color in grade Toggenburg goats. Tex.

Milch goat improvement.--To determine the milk-producing capacity of the native goat and the improvement that may be expected by the use of purebred bucks from a milk breed such as the Toggenburg. Records of the cost of producing milk will also be kept. N. Mex.

Land clearing with goats. Oreg.

Determination of the relation of skin folds to weight of fleece on Rambouillet sheep. Tex.

ANIMAL HUSBANDRY, SWINE.

General.

Growing and fattening of Wyoming pigs. Wyo.

Methods of growing pigs. Pa.

Growth studies with swine. W. Va.

ANIMAL HUSBANDRY, SWINE--General. (Cont.)

Growth studies with young pigs. W. Va.

The relation between the birth and weaning weights of swine and weights of maturity. N. J.

Experiments with hogs on irrigated land. (Huntley Substation) Mont.

Sanitation of premises and equipment for hogs. Ky.

Producing pork for market. (Irrigation Substation) Wash.

White salt v. smoked salt in curing and keeping pork. Ky.

Breeds and Types, Breeding.

Physiological effect of heterozygosis in swine. Iowa.

Breeding purebred swine. Wyo.

Experiments in the "upgrading" and better management of the types of hog found in the mountain districts of Kentucky. Ky.

Swine breeding (public improvement work).--To improve or upgrade the native swine of the island. Guam.

Swine breeding (development of improved station breeds).--To develop a type of hog suited to local conditions. Guam.

Hog breeding.--To ascertain how well Hampshire hogs are adapted to interior Alaska. (Fairbanks Substation) Alaska.

Studies on different breeding systems with swine. Inbreeding v. outbreeding. Iowa.

Studies of two different breeding systems with swine. Limited inbreeding and outbreeding. Okla. (A)

Inbreeding swine as a basis for improvement. (Southeast Substation, Waseca). Minn.

The breeding and production of a special type of bacon hog. (Edgeley Substation) N. Dak.

ANIMAL HUSBANDRY, SWINE--Breeds and Types, Breeding. (Cont.)

- A study of swine types covering growth, feed requirements, visceral development, and carcass production, determining differences existing and causes therefor. Iowa. (A)

The value of different types of Poland China pigs for market production.--To determine the maintenance requirement, rate of gain, economy of gain, composition of gain, and market value of Poland China pigs of different types. Ill. (A)

Value of different types of Poland China pigs for market production. Ill.

Economy of production of lard and bacon hogs. N. Dak.

Possibilities in producing high quality export bacon in Wisconsin and comparison of rations for bacon production. Wis.

Prolificacy of sows, mortality of pigs prior to date of weaning, and relative thrift of pigs.--To study the relation of prolificacy to breed and type; to determine whether large litters mature more market hogs than medium litters; to learn whether the pigs from large litters are as thrifty as those from medium litters. N. Dak.

Study in the economy of producing feeder hogs. (Coastal Plains Substation) Miss.

Comparing feed costs of growing spring and fall pigs in Delaware. Del.

Family sow project.--To determine the value and cost of keeping two sows and their offspring for home consumption of meat. N. C.

Fecundity of swine. The normal sexual cycle and as influenced by unfavorable dietary conditions. Mo. (A)

Brood Sows, Maintenance and Management.

Maintaining brood sows. Pa.

Maintenance of brood sows. Cost and methods of feeding. Mont.

Wintering pregnant sows. Iowa.

Swine feeding. Economical winter rations for brood sows. (Union Substation) Oreg.

Comparison of rations, methods of shelter, and methods of management for wintering brood sows. Wis.

ANIMAL HUSBANDRY, SWINE--Brood Sows, Maintenance and Management. (Cont.)

Wintering brood sows: A study of the influence of feed, exercise, and degree of fatness of sows during pregnancy--Also the residual effects of the treatment of the sows during pregnancy upon the growth and development of their litters from farrowing till weaning age. Ind.

Wintering brood sows.--To determine the effect of rations fed during the gestation and suckling periods upon litters, and the value of soy beans as a source of protein in brood sow and pig rations. Ind.

Sow management and feeding problems. Wash.

Alfalfa hay as a winter feed for brood sows. Del.

Legume hays v. tankage as proteid supplements for brood sows. Relative value of various legume hays in cheapening the winter ration. Influence of the use of these on the size and vigor of pigs produced. Ark.

The effect of plane of nutrition upon immature brood sows. Mo.

Cost of Production. (See RURAL ECONOMICS, Cost of Production and Accounting.)

Feeding Experiments, General. (See also FEEDING STUFFS AND ANIMAL NUTRITION.)

Factors in the summer feeding of market hogs. S. Dak.

Factors in winter feeding of market pigs. S. Dak.

Bacon hogs compared with lard hogs on various rations. N. Dak.

Hog feeding. Various methods of finishing for market. (Hermiston Substation) Oreg.

The effect of various feeds upon gains made and quality of pork produced. Idaho.

A comparison of home-grown and purchased feedstuffs for economical pork production. Fla.

Effect of various feeds on gains made and quality of pork produced. Idaho.

Growing pigs to weaning age.--To study the methods of feeding pigs from the time they begin to eat solid food until they are ready to be weaned. Ind.

ANIMAL HUSBANDRY, SWINE--Feeding Experiments, General. (Cont.)

Growing and fattening spring pigs for market.--To compare full feeding of grain to hogs in pasture for early fall marketing and growing shoats on pasture followed by full feeding in dry lot, also to compare some principal forage crops for growing shoats and fattening hogs. Ind.

Dry lot rations for swine. Iowa.

Swine feeding.--Growing and fattening hogs in a dry lot in comparison with those grazed on leguminous and nonleguminous forage crops, while on full grain rations. (Union Substation) Oreg.

Fattening pigs on dry farm grains. (North Montana Substation) Mont.

White v. yellow corn for growing pigs. Iowa.

Yellow corn v. white corn for feeding pigs. (North Platte Substation) Nebr.

The value of white v. yellow corn for hogs. (Torrington) Wyo.

Comparison of the value of native corn as compared with eastern corn in the feeding of hogs. (Torrington) Wyo.

Suitable rations for fattening hogs.--To compare corn and Indiana grown barley as fattening feeds for hogs; to study methods of feeding barley with tankage and with corn and tankage, the effects of high fiber content in a mixed fattening ration, the effects of high fiber content on the appetite of the hog and to demonstrate the feeding principle of suitability of feeds for specific purposes. Ind.

Rations for fattening hogs. Various rations in comparison with corn and tankage in self-feeders. Nebr.

Hegari v. corn for fattening hogs in dry lot. Ariz.

Feeding corn to hogs in dry lot with and without supplement (Torrington) Wyo.

A comparison of rations containing corn, wheat middlings, buckwheat middlings, tankage 60 per cent protein, and tankage 50 per cent protein and 10 per cent bone meal for swine. Pa.

Fattening pigs in dry lot on corn v. barley.--To compare the relative economy and efficiency of these two grains. N. Dak.

Barley v. corn for fattening swine. Mo.

Barley feeding experiments with hogs. Ky.

ANIMAL HUSBANDRY, SWINE--Feeding Experiments, General. (Cont.)

The value of ground rye fed with certain supplements as a ration for growing pigs. Minn.

Rice bran for growing and fattening pigs. Tex.

Influence of rice polish fed with linseed meal and with tankage to pigs. Ohio.

Rice and rice products as feeds for swine. (Davis Substation) Calif.

The preparation of wheat for feeding hogs. Okla.

Swine feeding. Feeding value of wheat by-products. (Northwest Substation, Crookston) Minn.

The feeding value of wheat by-products for growing fattening pigs. Minn.

Molasses for hogs.--To determine the extent to which the palatability of a ration is increased by the use of molasses in connection with shorts or barley. Oreg.

Beet molasses as feed for young hogs. Cooperative work with packing houses to determine the value of tankage as a winter feed for brood sows and young pigs. Utah.

Pig feeding investigations. Waste fruit for hogs. Oreg.

The use of fruit and fruit by-products in feeding swine. (Davis Substation) Calif.

Feeding of cull apples, potatoes, and other miscellaneous feeds for the production of pork. Wash.

By-products for fattening swine. Pa.

The feeding value of raw and cooked potatoes for hogs. S. Dak.

Breadfruit, coconut meal, cowpeas, and tankage for growing swine.--To determine the suitability for growing pigs of a ration composed of breadfruit (cooked), cowpeas, coconut meal, and tankage. Guam.

Cassava, coconut meal, cowpeas, and tankage for growing swine.--To determine the suitability for growing pigs of a ration composed of fresh cassava, cowpeas, and tankage. Guam.

Blackstrap molasses for fattening pigs. Ala.

ANIMAL HUSBANDRY, SWINE--Feeding Experiments, General. (Cont.)

Swine feeding. Screenings for fattening swine. (Northwest Substation, Crookston) Minn.

The value of yeast for feeding swine. Mich.

Pig feeding investigations. Water necessary for pigs. Oreg.

Forage Crops: Hogging Off.

Economic utilization of crops for the production of pork. Wash.

Forage crops for growing and fattening swine. Ark.

Forage crops for swine. Iowa.

Pastures for pigs. Oreg.

Value of pastures.--To determine the value of permanent v. temporary pastures for hogs full fed and on limited rations. N.C.

Methods of feeding swine on pasture. Mont.

Systems of fattening pigs on forage. Wash.

Method of feeding pigs on forage. Pa.

All-year grazing for brood sows.--To ascertain the practicability, the extent of grazing as to time, and the number of brood sows (variable as to weight) that an acre of land will carry when proportioned with rye and alfalfa for grazing. N. Mex.

Pasture v. no pasture for hogs. Md.

Pasturing crops for pigs. Comparison of all available forage crops for the economic pasturing of pigs.--To determine the ages at which pigs can make most use of green forage crops. A study of the quantity of grain to supply to make the most economic use of green forage crops. N. Dak.

Hog pasture experiments to find a suitable sequence of grazing crops for hogs and the necessary concentrates to produce fat pork by the end of the grazing season. (Lightfoot Substation) Va.

Experiments with hogs on dry land pastures. (Huntley Substation) Mont.

Comparison of forage crops for swine and of concentrates and supplements to feed on forage. Wis.

ANIMAL HUSBANDRY, SWINE--Forage Crops: Hogging Off. (Cont.)

Hogging-off crops v. dry lot of feeding.--To compare the practice of hogging-off crops in field to feeding in dry lot; to compare the practice of growing protein supplements in the field with corn and the practice of adding protein supplements to corn in the field at the time of hogging-off and to compare supplements to be used with corn which is hogged-off. Ind.

Hogging-off v. pen feeding of corn. Md.

Fattening pigs in dry lot on barley v. hogging-off corn.--To determine whether corn can be hogged-off to advantage by May-farrowed pigs. N. Dak.

Annual dry land pastures for swine. (Huntley Substation) Mont.

Perennial dry land pastures for swine. (Huntley Substation) Mont.

Hogging-off field crops. Idaho.

Pasture trials and hogging off experiments: (a) Alfalfa pasture; (b) rape pasture. Mich.

A comparison of Sudan grass pasture with alfalfa pasture for pigs. (North Platte Substation) Nebr.

Feeding hogs on pasture: (a) To compare clover, alfalfa, and rape as forage crops, (b) to compare full feeding of grain to hogs on pasture for early fall marketing, and growing shoats on pasture followed by full feeding in dry lot, (c) to compare feeding on pasture with feeding in dry lot, and (d) to compare corn and protein supplement with corn alone for feeding hogs on pasture. Ind.

Forage crop experiment with swine on different kinds of pasture and fed varying amounts of grain. Mont.

Feeding hogs on pasture.--To compare full feeding grain to pigs on pasture for early fall marketing and growing pigs on pasture followed by full feeding in dry lot; to compare feeding on pasture with feeding in dry lot. Ind.

Feeding on rape pasture for pigs.--To compare (a) limited feeding, (b) limited feeding followed by full feeding, (c) full hand feeding, and (d) self feeding. Ohio.

Comparative tests of rape, crimson clover, burr clover alfalfa, rye, and barley as winter grazing crops for hogs. S. C.

ANIMAL HUSBANDRY, SWINE--Forage Crops: Hogging Off. (Cont.)

Feeding hogs on pasture.--To determine the value of tankage, soy beans, and mineral as supplements to corn for growing and fattening pigs in dry lot, and the value of the same as supplements to a basal ration of corn and alfalfa pasture for growing and fattening pigs. Ind.

Hog grazing tests with peanuts, soy beans, small grains, alfalfa, and clovers.--To determine the amount of grazing from each and their effect on the quality of the pork. Miss.

Comparative test of peanuts, sweet potatoes, soy beans, velvet beans and corn for pork production. S. C.

Hogging-off corn. Minn.

Hogging-off corn. Pa.

The value of hogging down corn as a practice for New Jersey farmers. N.J.

Hogging-off corn.--To determine the best size and age of pigs for hogging-off corn and the economy of fattening hogs by this method, the best variety of corn for the purpose; to learn what proportion of the seasons will sufficiently mature corn for it to be available for hogging-off. N. Dak.

Swine feeding. Hogging-off corn and soy beans. (Northwest Substation, Crookston) Minn.

Hogging down corn containing soybeans at various stages of maturity. Ohio.

Hogging down corn, corn and soy beans, and corn and rape. Ohio.

Hogging down corn and soy beans. Mo.

Hogging off experiments with peas and corn (Edgeley Substation) N. Dak.

Grazing crops hogged-off.--To determine the value of peanuts, sweet potatoes, corn and soy beans, and young corn (dough stage) when hogged-off by weaned pigs that are to be pushed for market. (Upper Coastal Plain Substation, Rocky Mount) N. C.

Value of pastures.--To determine the value of pastures for sows and suckling pigs, and alfalfa v. oats for weaned pigs. (Upper Coastal Plain Substation, Rocky Mount) N. C.

ANIMAL HUSBANDRY, SWINE--Forage Crops: Hogging Off. (Cont.)

Grazing crops.--To determine the amount of pork produced from an acre of soy beans when supplemented with a 2 per cent ration of corn, and the amount produced from hogging off an acre of mature corn. (Wenona Substation) N. C.

Grazing crops.--To determine the value of soy beans and of red clover supplemented with grain when used as grazing crops for pigs. (Statesville Substation) N. C.

Sweet clover pasture for pigs. Ariz.

Hogging down experiment.--To determine (a) the best crop to hog down, (b) the best combination of crops, without supplements, to hog down, (c) the best combination with supplements, (d) the effect of these crops if any on the production of soft pork, and (e) if so, attempts to harden the carcass by subsequent feeding with corn supplemented with tankage or other highly nitrogenous concentrate. Ky.

Garbage for Hogs.

Garbage for fattening pigs, including garbage alone and with grain and also slaughter tests. Oreg.

Mineral Supplements for Hogs.

Mineral supplements for brood sows. Wis.

Tests of various rations for finishing hogs. Tests of mineral supplements. Kans.

A simple mineral mixture for growing fattening pigs. Ala.

Minerals for growing and fattening pigs.--To determine the economic and nutritive value of minerals for fattening pigs. Ill.

Effect of acid phosphate and bone meal in mineral mixtures fed with corn and soy bean rations to pigs in dry lot. Ohio.

Marl as a source of calcium for swine. Minn.

ANIMAL HUSBANDRY. SWINE--Protein Supplements for Hogs. (For peanuts see Soft Pork.)

Protein supplements for pork production. Wash.

Protein supplements for growing pigs. Del.

A comparison of protein feeds for pigs. S. C.

A comparison of protein supplements in rations for young pigs following weaning. Minn.

Comparison of protein-rich supplements for swine and proportion needed to balance ration. Wis.

Protein supplements for swine. The place of protein supplements of animal origin in the feeding of swine in New York State. N. Y. Cornell.

Protein supplements for swine.--To determine the relative value of various protein supplements. Ark.

A comparison of various protein supplements for fattening pigs on concentrates and forage crops. Pa.

Supplementary protein feeds for hogs when hogging-off corn. Md.

Comparative value of Michigan grains for swine feeding. Mich.

Comparison of protein supplements to barley and corn for swine: Skim milk, whey, tankage, linseed meal and wheat middlings when fed separately and in combination. Wis.

Different protein supplements with barley and for fattening hogs. Idaho.

Barley and wheat for pigs when supplemented with tankage. Mont.

Coconut meal as a protein supplement for hogs.--To determine the value of coconut meal as a protein supplement in fattening hogs and particularly to test its palatability. Oreg.

Fall pig rations.--To determine the value of various protein supplements to corn in dry lot. Ill.

Supplements to corn for fattening hogs.--To compare the feeding value of some of the most important protein supplements for fattening hogs. Ind.

ANIMAL HUSBANDRY, SWINE--Protein Supplements for Hogs. (Cont.)

Dry lot hog feeding. (a) Rations of corn and tankage, corn and ground soy beans, and corn and soy bean oil meal, compared with the same rations plus mineral mixture, (b) comparison of mineral mixtures as supplements to a ration of corn and ground soy beans, and (c) comparison of methods of feeding mineral supplements. Ind.

Cottonseed meal for maintaining, growing, and finishing hogs. Texas.

Comparison of ground soy beans, cooked soy beans, soybean oil meal, and tankage as supplements to corn for dry lot feeding. Ohio.

Dry lot hog feeding.--To study the effect of different proportions of soy beans in the rations on the fat produced; to compare the effect of different proportions of corn and soy beans on the rate of gain in the hogs. Ind.

Soy beans.--To compare soy beans, soybean oil meal and tankage for supplementing corn and mineral for pigs in dry lot. Ohio.

Soy beans, soybean oil meal, linseed meal, and tankage for pigs on rape pasture. Ohio.

Velvet beans for feeder pigs. Ala.

Comparative test of the value of velvet bean meal, peanut meal, and cottonseed meal as protein feeds for hogs. S. C.

Additional supplements to tankage for feeding swine with corn in dry lot. Ohio.

The value of tankage and skim milk as protein supplements for young pigs at weaning time. Minn.

Tankage requirement for pigs when fed barley on rape pasture. S. Dak.

Fish meal v. tankage for pigs. Oreg.

Fish meal v. soybean meal (dry lot feeding).--To determine the comparative value of fish meal and soybean meal as protein supplements to corn when fed to pigs in dry lot. (Wenona Substation) N. C.

The use of dairy by-products in the feeding of swine. (Davis Substation) Calif.

Supplemental feeds for swine--skim milk, tankage, roots, alfalfa, etc. Mont.

ANIMAL HUSBANDRY, SWINE--Protein Supplements for Hogs. (Cont.)

A comparison of various forms of buttermilk for growing pigs. Minn.

Utilization of surplus skim milk in manufacture of dry mixed feeds for swine. Wis.

Comparison of gains made by pigs and chickens on milk feed. Miss.

Self Feeders.

Self-feeding pigs. Comparison of hand-feeding and self-feeding methods of growing pigs. Kans.

A comparison of the self feeder v. hand feeding for young pigs on forage crops. Pa.

Soft Pork.

Soft pork investigations. Ark.

A study of the factors influencing production of soft pork. S. C.

Soft pork investigations.--To determine the feeding value of the feeds or feed combinations used in the experimental lots. Ind.

Soft pork studies. The effect on body carcass of corn and rice feeding following peanut feeding. N. C.

Soft pork studies. The adequacy of the proteins in peanut meal for supporting growth when fed with an otherwise properly supplemental ration. N. C.

Soft pork studies.--To determine the effect of various amounts of peanuts on body carcass. N. C.

Soft pork. Grazing on peanuts and soy beans and finishing with corn and tankage. Miss.

The relation of peanuts, soy beans, and velvet beans when fed to hogs to softness and other changes in the pork. Ga. (A)

Effect of some southern feeds on the properties of lard. Peanut meal with supplementary feeds for hogs. Ala. (A)

ANIMAL HUSBANDRY, SWINE--Soft Pork. (Cont.)

Effect of peanuts upon the quality of the pork product. Okla. (A)

Soft pork.--To determine the effect of peanuts and corn on the carcasses of pigs. N. C.

The use of peanut meal for fattening hogs. Experiments to determine how much peanut meal could be fed to hogs and still produce a hard pork. Fla.

Soft pork investigations.--To determine the possibility (a) of making firm carcasses from hogs that have been made soft by feeding with such feeds as peanuts, soy beans, mash, rice products, etc., and (b) of producing firm carcasses by using feeds supplemental to the above during the growing and fattening periods. Ind.

Soft pork experiment.--To determine the possibility of making soft carcasses from pigs that are firm, when grazed on soy beans grown with corn, and then making firm carcasses from pigs that have been made soft by grazing on soy beans grown with corn. Tenn.

Soft pork.--To determine the effect on the carcasses of 40-pound pigs fed peanuts for 8 weeks with a subsequent feeding on corn and brewers' rice for 20 weeks. N. C.

Soft pork investigations. The relative dressing percentage of firm and soft hogs and the relative shrinkage through the various packing house processes of the hams, bacons, and shoulders of hogs of different degrees of firmness. Ind.

Soft pork investigations. The value to the consumer of both fresh and smoked products from soft hogs, as compared with the same products from firm hogs.

ANIMAL HUSBANDRY, POULTRY.

Breeding.

Inheritance in egg production. Data on maturity as indicating productive ability, inheritance of size and color of eggs and similar characters. Nebr.

The inheritance of size and color of hens' eggs. Chic.

Inheritance of egg weight in poultry. R. I.

Inheritance of body weight in poultry. R. I.

Inheritance of body weight in poultry crosses. R. I.

ANIMAL HUSBANDRY, POULTRY--Breeding. (Cont.)

Poultry breeding. Utah.

Poultry breeding and management investigations. Mich.

Breed improvements. Oreg.

Poultry experiment.--To breed up a good purebred Barred Rock flock.
(Langdon Substation) N. Dak.

Breeding and selection of single comb White Leghorns. Mont.

Chicken breeding (variety development).--To develop a new variety
of chickens well adapted to local conditions. Guam.

Chicken breeding (Cantonese).--To test the adaptability of the
Cantonese to local conditions; to develop an improved station strain.
Guam.

Chicken breeding (S. C. Rhode Island Reds).--To develop an improved
strain of pure blood S. C. Rhode Island Reds adapted to local con-
ditions. Guam.

Chicken breeding (public improvement work).--To improve the breeding
of chickens in Guam. Guam.

Improvement of mongrel flocks through selected standard bred cockerels.
A study of the feasibility of improving mongrel flocks through the
use of standard bred cockerels of White Wyandotte, Rhode Island Red,
and White Orpington varieties. Kans.

Poultry experiments. Grading up a farm flock of mongrels by use of
pedigreed cockerels. (Northwest Substation, Crookston) Minn.

Breeding for egg production. Iowa.

Breeding poultry for egg production. Mass.

Breeding for egg production. Wash.

The breeding of purebred poultry for high egg production. Ky.

Breeding.--To develop heavy laying strains of standard bred poultry
and maintain breed quality. N. Dak.

The development of a high producing strain of single comb White Leghorns.
N. J.

ANIMAL HUSBANDRY, POULTRY--Breeding. (Cont.)

Breeding single comb White Leghorns and Barred Plymouth Rocks for egg production.--To improve egg production by breeding and to observe physical characteristics which indicate high egg production. Ind.

Poultry breeding experiments.-- To increase egg yield, uniformity of eggs, prepotency of egg production, and breed characteristics. N. Mex.

Breeding to extend the profitable laying age of the domestic fowl. Oreg.

A comparison of various breeds of poultry when kept for profit under uniform conditions of feed and care. (North Central Substation, Grand Rapids) Minn.

A comparison of breeds as to their efficiency as egg producers. Miss.

Poultry experiments. Purebreds v. mongrels. (Northwest Substation, Crookston) Minn.

Pedigreed v. nonpedigreed hens. Miss.

Poultry experiments. Trap-nesting and pedigree breeding. (Northwest Substation, Crookston) Minn.

Breeding studies with single comb White Leghorns and Rhode Island Reds and Barred Plymouth Rocks, and facts of physical signs which indicate egg production; to determine the influence of the male as transmitting the factor of high egg production, influence of the female as transmitting powers of high egg production. Physical signs of high egg production. N. C.

Breeding for factors essential to the exhibition of fowls. N. J.

Selection for egg weight in White Plymouth Rocks. R. I.

Breeding systems with poultry. Iowa.

Effect of inbreeding poultry. N. Y. Cornell.

Breeding experiments with poultry to study the effects of selection and inbreeding. N. Y. State.

Studies on inbreeding with Rhode Island Red fowls. Effects of inbreeding on fowls. Wis. (A)

The relative importance of the sire and dam in breeding and mating for high production. N. J.

ANIMAL HUSBANDRY, POULTRY--Breeding. (Cont.)

Relative influence of sire and dam on the offspring. Oreg.

The economy and value of proven sires. N. J.

Poultry husbandry investigations. Keeping of heavy and light breeds under like conditions. (Northeast Substation, Duluth) Minn.

Hybridization for meat production. R. I.

Poultry breeding and egg laying contest. Ariz.

Chicks, Brooding and Feeding.

Rate of growth of chicks under normal conditions. Mo.

Growth of chicks in confinement. Ohio.

Nutritive requirements of growing chicks. A study of the essentials of a ration for baby chicks. Nebr. (A)

Influence of poorly balanced ration fed to growing chicks as affecting their mature live weight, rate of maturity, date of laying first egg, egg production, and vigor of progeny. W. Va. (A)

The influence of nutrition factors on growing chicks. N. Y. Cornell.

Raising chicks in confinement.--To determine a ration and method of feeding and care of young chicks which will permit the normal growth in confinement without the heavy mortality usually experienced at the age of 6 to 12 weeks. Ind.

Comparison of various feeds for young chicks. Tex.

Chick feeding and brooding.--To compound rations from feeds readily available in the several sections of the State which will be suitable for baby chicks. Ariz.

Chicken feeding. Coconut meal as a part ration for growing chicks. Guam.

Effect of different amounts of different animal foods upon the mortality, growth and further development of White Leghorn chicks. Effect of powdered whole milk. Minn.

Utilization of by-product eggs from hatcheries. Ohio.

ANIMAL HUSBANDRY, POULTRY--Chicks, Brooding and Feeding. (Cont.)

Protein supplements for growing chicks.--To study the effects of different forms of milk and milk products on the growth of chicks under limited range conditions. Ill.

The value of sour milk and beef scraps in rations of growing chicks, and the cost of growing chicks. Mo.

Chick feeding.--To determine the relative feeding value of liquid, semi-solid, and dried buttermilk to growing chickens. Ind.

Effect of skimmed milk on growing chicks. Miss.

Comparison of gains made by pigs and chickens on milk feed. Miss.

A study of vitamin-carrying additions to the ration of baby chicks. Iowa.

Poultry husbandry investigations. Comparative economy of hatching and of buying day-old chicks. (Northeast Substation, Duluth) Minn.

Poultry experiments. Drink for brooder chicks. (Northwest Substation, Crookston) Minn.

The growth of young chicks as affected by rations deficient in vitamin A. Ohio. (A)

Calcium requirements of chickens. Wis.

Cost of Production. (See RURAL ECONOMICS--Cost of Production and Accounting.)

Egg Laying Contests, Exhibitions, and Routine Records.

Improvement of poultry through the establishment of egg laying contests and breed testing stations. N. J.

Storrs international egg-laying contest. Conn. Storrs.

Egg Laying, Physiology and Correlations. (See also GENETICS.)

The inheritance of weight, color, and texture of shell of eggs in the single-comb White Leghorn. Idaho.

Inheritance of egg production in heavy breeds. N. Y. Cornell.

Inheritance of egg production in Leghorns. N. Y. Cornell.

ANIMAL HUSBANDRY, POULTRY--Egg Laying, Physiology and Correlations. (Cont.)

Inheritance of egg production. Kans. Oreg.

Breeding as affecting egg production. Tex.

A study of methods of pullet selection for egg production. Md.

Study of types as a basis for selecting pullets for egg production.
Iowa.

Study of type. Relation between high egg production and type or con-
formation. Oreg.

External characteristics of the hen as indicating laying capacity. Oreg.

Studies in measurements and weights of laying hens.--To determine the
kinds and extent of changes in body measurements and weights during
laying and nonlaying conditions of hens, and the relation, if any,
between the type and weight of a hen and her total yearly production.
Ind.

The influence of selection by external characters upon second year pro-
duction and production of progeny. Okla.

Effect of molt on egg production. Iowa.

Time of molt as an index to productivity of hens. Mo.

Influence of climatic conditions on egg production.--To determine if
single comb White Leghorns of same breeding and raising, one-half
at Winnipeg and the other half at Raleigh, both flocks receiving
the same feed in kinds and amounts and normal daylight as feeding
hours, will show the same egg production curve. Do birds at a
southern latitude lay earlier and finish their year's laying earlier?
N. C.

Correlation of sexual maturity to annual egg production. Mo.

Early laying maturity in relation to good laying. Oreg.

The analysis of egg production pen records. N. J.

Study of winter egg production. Miss.

A study of high winter egg production as a factor in the single comb
White Leghorn. Idaho.

The relation of certain constituents of sour skim milk to egg produc-
tion. Idaho.

ANIMAL HUSBANDRY, POULTRY--Egg Laying, Physiology and Correlations. (Cont.)

The influence of feeds of high vitamin content upon the production and hatching quality of eggs and upon the health of the layers. Idaho.

Sources of lime for eggshell formation. Ohio.

The feeding of tonics to laying pullets.--To find the influence of so-called tonics or stimulants in egg production of Leghorn pullets. Ind.

The internal secretion of the domestic fowl as related to fecundity and as modified by environmental influence. N. Y. Cornell.

The relation of external characters, actions, and the distribution of egg production to proficiency and to the quality of eggs of the domestic fowl. N. Y. Cornell.

Feeding hens to influence hatching power of eggs.--To find the influence of different feeds upon the fertility and hatching power of eggs from breeding hens of the Barred Plymouth Rock and White Leghorn breeds. Ind.

The production factors influencing the interior quality of eggs. N. Y. Cornell.

Investigation of extent and crosses of variation in quality of new laid eggs and of the causes and prevention of deterioration in quality of eggs. (Davis Substation) Calif.

Egg investigations.--To standardize market eggs through (a) comparison of size, shape, and color of eggs produced by individual hens from pullet to maturity, (b) comparison of eggs of dam with those of her progeny, and (c) effect of incubation, moisture, and temperature on fertile, infertile, clean, dirty, and washed eggs. N. Dak.

Feeding and Fattening, General. (See also FEEDING STUFFS AND ANIMAL NUTRITION.)

Studies in poultry feeds. Okla.

Poultry feeding.--To devise a simple ration for feeding poultry. Md.

Poultry feeding experiments.--To test the value of common local feeds fed. N. Mex.

Poultry feed palatability. Kans.

The utilization of waste or cheap foods in poultry feeding. N. Y. State.

Feeding experiments with poultry relating to the importance of coarser vegetable foods. N. Y. State.

ANIMAL HUSBANDRY, POULTRY--Feeding and Fattening. General. (Cont.)

Feeding demonstrations.--To obtain records of egg production, feed consumed, labor costs and other items of expense and income on a large flock kept under farm conditions and fed and managed by Purdue methods. Ind.

Feeding hens for breeding purposes. N. Y. Cornell.

Methods of feeding pullets for egg production. N. Y. Cornell.

Rations for egg production.--To determine the relative desirability of a simple and a complex ration of equivalent chemical composition. Ill.

Poultry feeding.--To study the value and cost of fattening market poultry. N. Dak.

Variety v. simple rations for layers. Ohio.

"White" v. "yellow" rations for poultry. Wis.

Different rations in fattening.--To test the more simple feeds against the more complex in fattening broilers. N. C.

Broiler production.--To determine the most satisfactory combination of feeds for the economical production of broilers of high quality, and to determine the most desirable fattening period. Ariz.

Methods of feeding rations to laying pullets, as to whether it is best to vary the proportion of grain to mash in the winter and summer, and the influence of seasonal changes in the mash on the hatching power and fertility of eggs. Ind.

Methods of feeding pullets.--To find whether it is necessary or not to increase the grain ration to pullets in the winter time, and if an addition of corn meal in the mash is of any benefit as compared with the standard Purdue ration of mash calling for no corn feed meal. Ind.

Brewing barley v. hull-less barley for laying hens. Mont.

Value of hull-less barley, oats, corn, and peas in egg rations. Mont.

A comparison of the feeding value of kafir, cane, milo, and corn. Kans.

Poultry feeding. A comparison of corn silage, buttermilk, grain, and meat scraps, with commercial feeds. Utah.

ANIMAL HUSBANDRY, POULTRY--Feeding and Fattening, General. (Cont.)

Studies in the feeding of corn and corn by-products to cockerels.--To determine the nutritive value of white and yellow corn and the different parts of the corn kernel in the maintenance of health and weight of mature cockerels in confinement. Ind.

The comparative value of certain feeds as supplements to pea meal for laying hens. Idaho.

A comparison of the common grains in supplementing sour skim milk as a feed for laying hens. Ky.

The value of clam and oyster shells for poultry. Iowa.

Investigation of nutritional diseases of poultry. (Petaluma) Calif.

Poultry experiments. Fattening of poultry for market. (Northwest Substation, Crookston) Minn.

Enzymic products as a factor in poultry nutrition. N. J.

Illumination of Hen Houses.

A study of the methods of poultry house lighting. N. Y. Cornell.

Effect of artificial illumination on breeders. N. Y. Cornell.

Effect of artificial illumination on growth and maturity of pullets.
N. Y. Cornell.

Artificial light in egg production, using lights morning and night in the laying house. Mont.

Influence of artificial illumination in the control of egg production, especially with reference to flock segregation according to laying qualities and physical condition. N. Y. Cornell.

Effect of artificial illumination on early hatched and early maturing S. C. W. Leghorn pullets. Pa.

The use of artificial light as a means of increasing egg production.
Iowa.

Electric lighting of poultry houses.--To find the influence of electric lights in a poultry house between 8 and 9 p. m. on two-year-old Leghorn hens. Ind.

ANIMAL HUSBANDRY, POULTRY--Incubation, Fertility, and Hatching of Eggs.

Incubation experiments. Colo.

Incubation studies. Utah.

Incubation of eggs. Mont.

Incubating and brooding of chicks. Wyo.

Brooding tests.--To determine the cost and advantages of brooding by different artificial and the natural systems. N. Mex.

Poultry experiments. Incubation and hatching. (Northwest Substation, Crookston) Minn.

Experiments dealing with factors controlling incubation. Idaho.

A complete and long-time investigation of the mechanics and processes of artificial incubation. N. J.

Incubation tests.--To make a study of the different kinds of incubators and their efficiency under arid conditions. N. Mex.

Problems of the mammoth incubator. Conn. Storrs.

Incubation temperatures.--To determine results of subjecting eggs during incubation to varying degrees of temperature and its relation to optimum temperature for artificial incubation of hen's eggs: Difference in results secured from White Leghorn and White Plymouth Rock eggs; variation of optimum temperatures in different types of incubators; loss of moisture as a factor of difference in temperature. Ind.

The effects of subnormal temperatures on chick embryos, partly to determine whether resistance to cold is one character by which "high" and "low" hatch fowls differ. Conn. Storrs. (A)

Incubation studies.--To determine the causes contributing to the mortality of artificially incubated eggs. Kans.

Comparative cost, with the use of different types of electric incubating and brooding equipment. (Davis Substation) Calif.

The carbon dioxide thrown off by eggs during incubation as a measure of the vigor of the embryos and study of certain factors influencing the production of carbon dioxide. W. Va. (A)

ANIMAL HUSBANDRY, POULTRY--Incubation, Fertility, and Hatching of Eggs.
(Cont.)

Influence of management and feeding on vigor in germ of hen's eggs.

- (a) Corn v. wheat rations as affecting the vigor of chick embryos;
(b) a study of factors (confinement and the use of green feed) affecting the fertility, hatchability, and size of hen's eggs; and (c) the influence of an abundant supply of protein and ash constituents of animal origin in a ration for little chickens as affecting their mature weight and the number and average size of the eggs which they lay. W. Va. (A)

The hatchability of eggs. Mass.

Studies of variation in the hatching qualities of eggs. Tex.

Management, Housing, etc.

Poultry management.--To secure data on the most successful management to be followed for the long continuation of a poultry plant. Me.

Feeding and management of poultry for winter egg production. (Torrington) Wyo.

Flock management for egg production. Wyo.

Systems of culling flocks. Md.

Time of hatch. Okla.

Date of hatching.--To determine the most desirable range of time within which to hatch chicks for the best results in egg and broiler production. Ariz.

Time of hatching in relation to egg production. Mo.

Influence of time of laying starts to future egg production. Mo.

The influence of previous heavy laying on the vigor of the progeny of fowls. W. Va. (A)

Yards v. confinement for laying hens. (Davis Substation) Calif.

Improvement of existing poultry houses to provide optimum environment during winter confinement. N. J.

Poultry housing. (Davis) Idaho.

Housing purebred poultry. Ky.

To devise and improve poultry equipment and methods used in handling poultry. Md.

ANIMAL HUSBANDRY, POULTRY--Protein Supplements for Poultry.

- A study of the comparative efficiency of various proteins in poultry feeding. Nebr. (A)
- A comparison of protein supplements for egg production. Ariz.
- Sources of animal protein as influencing egg production. N. Y. Cornell.
- Effect of different sources of animal protein on the egg production and condition of laying pullets, with a record of the hatchability of eggs and livability of chicks. Pa.
- Comparison of skim milk, fresh buttermilk, tankage, semisolid buttermilk, and crackling scrap, as a source of protein for laying hens. Iowa.
- Comparison of dried buttermilk, fresh buttermilk, tankage, and meat scraps as a source of animal protein for laying hens. Iowa.
- Comparative value of dried, semisolid, and fresh buttermilk on crate fattening poultry for market. Iowa.
- The value of milk v. meat meal as affecting the health of flocks. N. C.
- The value of milk as animal feed v. fish meal or meat meal for growth, N. C.
- A comparison of sour skim milk and semisolid buttermilk, with and without mash, for laying hens. Ky.
- Preservation of skim milk curd for poultry feeding. Ariz.
- The value of meat scrap in a laying ration.--To find the proper proportion of animal protein in the form of meat scrap in a laying ration for White Plymouth Rocks; its bearing on the per cent of meat scrap variability in quantity of meat scrap which can be fed without influencing egg production; feeding value of meat scrap; results of too much meat scrap on egg production, health, fertility, hatchability, etc. Ind.
- Different amounts of meat scrap in the dry mash for egg production. With Barred Rocks and White Leghorns. Ohio.
- All-egg meal v. meat scraps for egg production. Ohio.
- The value of fish meal v. meat meal in growth of chicks. N. C.
- The value of fish meal v. meat meal in egg production. N. C.

ANIMAL HUSBANDRY, POULTRY--Protein Supplements for Poultry. (Cont.)

Vegetable and animal sources of proteins for laying hens. Ark.

The value of sour milk, beef scrap, cottonseed meal, gluten meal, and oil meal in rations for egg production. Mo.

Value of protein for laying hens. A comparison of cottonseed meal, beef scraps, and skim milk as egg producers. Miss.

The feeding values of different vegetable proteins in rations for laying pullets. Ind.

Comparison of the feeding values of protein from vegetable sources with protein from animal sources for laying hens. Tex.

Feeding value of soy bean oil meal in a laying ration for White Leghorn pullets.--To find if soy bean oil meal can be substituted for tankage in a ration for White Leghorn pullets. Its influence on fertility, hatching power, egg production, health, and cost. Ind.

Feeding value of soy bean oil meal for Barred Plymouth Rock pullets.--To find if soy bean oil meal can be substituted for tankage in a ration for Barred Plymouth Rock pullets. Its influence on fertility, hatching power, egg production, health, and cost. Ind.

Mungo beans as a protein supplement for growing chickens.--To determine the value of mungo bean meal as a protein supplement for growing chickens. Guam.

Vegetable proteins with mineral supplements v. meat scraps for egg production. Ohio.

The value of vegetable proteins supplemented with minerals v. animal feeds as fish meal in growth. N. C.

Supplements for winter egg production and hatchability. Alfalfa meal and dried yeast. Ohio.

Poultry husbandry investigations. Feeding of yeast. (Northeast Substation, Duluth) Minn.

To study the value of yeast as a partial substitute for animal protein in the rations of growing chicks and of laying hens; also, its effects, if any, on fertility and hatchability. N. Dak.

ANIMAL HUSBANDRY, POULTRY--Turkeys.

Turkey raising. (Valentine Substation) Nebr.

The artificial incubating and brooding of turkeys. (Davis Substation) Calif.

Incubation and rearing of turkeys.--To determine the cost factors and the problems involved in the incubation and rearing of turkeys. Ind.

Miscellaneous.

The natural poultry life span. N. J.

The error factor in experimental analysis as found in poultry husbandry investigation. N. J.

The improvement of quality in poultry through the organization and supervision of poultry experiments. N. J.

An economic study of the poultry industry. A study of the farm industry relations of the poultry industry and of other economic factors in the poultry industry. Kans.

Routine work with poultry. Exact and detailed records of all matters concerning poultry, including autopsies of all birds dying, etc. Me.

Plumages and molts of water fowl. N. Y. Cornell.

Quantity production of fly larvae for food for young pheasants. N. Y. Cornell.

The composition of the gains in weight put on by pullets, cockerels, and capons of successive ages from hatching time to maturity. The rate of increase in size of the entire bird and of individual organs. Ill. (A)

The effect of calcium on the composition of the eggs and carcass of the laying hen. Ky. (A)

To devise a method of estimating the surface area of live chickens from the live weight and suitable linear measurements; to determine the basal heat production of cockerels, pullets, and capons per unit of body surface per day at different ages. Ill. (A)

DAIRY PRODUCTS.

Bacteriology of Dairy Products.

Studies in dairy bacteriology. N. Y. Cornell.

Investigations in dairy bacteriology. (Davis Substation) Calif.

Studies in bacterial physiology. N. Y. Cornell.

Accuracy of bacterial counts in milk samples. N. Y. State.

A bacteriologic study of the accuracy and applicability of the method used for estimating the number of bacteria in milk and for judging the keeping quality of milk. Ill.

Comparison of methylene blue reduction test and other test for determining bacterial content of milk. Wis.

Observations on the bacterial counts of milk at hourly intervals (a) when cooled to 70° F. immediately after milking, (b) when cooled to 50° F., and (c) when left uncooled. Conn. Storrs.

Bacteriological examinations of certified milk. Calif.

Studies on the bacterial flavors and odors of milk. Iowa.

Chemical and bacterial study of the keeping qualities of butter.--To determine the action of specific bacteria upon milk proteins and a study of the cleavage products produced by the action of those organisms. Ind. (A)

Cheese flora studies. N. Y. State.

Study of bacteria in ice cream. Mich.

Yeasts in dairy products. Iowa.

Butter and Butter Making.

Experiments in the manufacture of butter. (Davis Substation) Calif.

A study of the production and marketing of butter in Missouri. Mo.

Comparison of alkali, alcohol, rennet, acid, temperature, and other tests for ripeness of milk; (a) for cheese making, (b) for butter making. Vt.

DAIRY PRODUCTS--Butter and Butter Making. (Cont.)

Factors influencing the composition and quality of butter. Minn.

Peroxidase enzymes in butter. Minn.

Moisture contents of hard and soft butters.. Determination of relationship, if any, of moisture content to varying solidity, texture, etc. Vt.

The effect of acidity of cream on quality of butter. Wis.

The effect of neutralization of sour cream on butter. Wis.

A study of the chemistry and physico-chemistry of churning and the factors which influence churnability. Minn. (A)

A study attempting to develop a method of reducing the butterfat loss in churning. Ill.

Cooling cream on the farm.--To determine the effect of different methods of caring for cream on the quality of the cream, and the quality of butter that can be made from a definite grade of cream. Ind.

Effect of freezing of cream on the quality of butter produced. S.Dak.

Cost of producing sweet cream as compared to cost of producing sour cream. S. Dak.

A study of the various factors, especially the biological factors, that bring about the development of flavors in butter. Ill.

A chemical and bacteriological study of the action of specific organisms and of groups of organisms found in sweet and sour cream butter, or synthetic butter, salted or unsalted. Ind. (A)

Chemical and bacterial study of the keeping qualities of butter.--To determine the action of specific bacteria upon milk proteins and a study of the cleavage products produced by the action of those organisms. Ind. (A)

Keeping qualities of butter.--To determine the factors influencing quality, flavor, and deterioration of butter during storage including influence of salt, decomposition of proteins, pasteurization, and bacterial flora, as well as the influence of temperature, coloring matter, lactose, fat, and enzymes. Mich. (A)

Improvement of flavor and keeping quality of hand-separator cream butter. Iowa.

DAIRY PRODUCTS--Butter and Butter Making. (Cont.)

The effect of carbon dioxide on the quality and keeping quality of butter and ice cream. Iowa.

A study of whey butter. N. Y. Cornell.

Butter oil as a substitute for sweet butter in manufacture of homogenized cream, ice cream, etc. Comparative studies as indicated in title. Vt.

Methods of sampling for the control of butter composition. N. Y. Cornell.

Cheese and Cheese Making.

Experiments in cheese manufacture. (Davis Substation) Calif.

Studies in cheese making. Objects: Effect of temperature of cooking on texture of cheese, effect of amount of rennet or pepsin on rapidity of curing cheese, the possibility of curing cheese in Oklahoma factories, controlling factors in proper handling and marketing of cheese in Oklahoma. Okla.

Comparison of alkali, alcohol, rennet, acid, temperature, and other tests for ripeness of milk (a) for cheese making, (b) for butter making. Vt.

Methods of dairy manufacturing. Effect of clarification on quality of cheese. Utah.

The factors making flavor of cheese under tropical conditions. The making and curing of cheese under tropical conditions. Porto Rico.

The manufacture of Cheddar cheese from pasteurized milk. N.Y. Cornell.

Manufacture of brick cheese from pasteurized milk. Wis.

Cheese making (cottage, Neufchâtel, whey, Romano, etc.). A study of the practice of cheese making with special reference to the manufacture of foreign cheeses. Vt.

Improvements in methods of making domestic Swiss cheese. Wis.

Experiments in the dessication of cottage cheese. Conn. Storrs.

Ice Cream.

Experiments in the manufacture of ice cream. (Davis Substation) Calif.

Investigations in the manufacture of ice cream. Experimental technic. N. Y. State.

DAIRY PRODUCTS--Ice Cream. (Cont.)

Problems in the manufacture of ice cream. Pa.

The properties of ice cream. N. Y. State.

Investigations in the manufacture of ice cream. Microscopic structure of ice cream. N.Y. State.

Investigations in the manufacture of ice cream. Physical properties of ice cream mixtures. N.Y. State.

The manufacture and chemical and bacterial study of ice cream.--To determine the most suitable and unsuitable methods of manufacturing and storing ice cream and the effects of the methods of manufacture and storage upon the quality of the ice cream. Ind. (A)

Factors influencing yield and consistency of ice cream. Iowa.

Study of the factors affecting quality in ice cream. Ill.

The control of yield and quality of ice cream. Mich.

Ice cream investigations. Studies of bacterial, mechanical, and temperature factors in the manufacture, transportation, and storage of ice cream. Kans.

The effect of each ingredient in the manufacture of ice cream. Mo.

Acidity of ice cream mix. Relation of degree of acidity of ice cream mix to structure, texture, stability, quality, etc., of ice cream. Vt.

A study of the principles of ice cream making. (a) The influence of percentage of butterfat in the mix upon the yield, body, consistency, and quality of the resulting ice cream, (b) the influence of homogenization and emulsification upon the viscosity of the mix. Nebr. (A)

Studies in ice cream making. Effect of pasteurization of mixes on overrun and of pasteurization and emulsification on overrun, uniformity of overrun from pasteurized and emulsified mixes. Use of commercial ice cream powders, standardization of mixes for total solids. Bacterial counts on ice cream. Okla.

Ice cream studies. Factors influencing the viscosity of ice cream. Minn.

The crystallography of ice cream. Wis.

To determine the factors which influence the lactose crystallization in ice cream. Minn.

DAIRY PRODUCTS--Ice Cream. (Cont.)

A study of physical, chemical, and bacteriological factors causing sandiness and swell in ice cream. Ind. (A)

Butter oil as a substitute for sweet butter in manufacture of homogenized cream, ice cream, etc. Vt.

Tests for the hardness, jelly value, bacteria, color, odor, solubility, and physical properties of gelatin that can be used by practical ice cream makers. Okla.

The effect of carbon dioxide on the quality and keeping quality of butter and ice cream. Iowa.

Ice cream studies. The relation between the gold number of gelatin and the protectiveness afforded the ice cream. Minn.

Milk. Composition, Handling, and Marketing.

Study of the composition of milk. Ill.

Market milk investigations.--To study old methods and attempt to develop new ones for the determination of the bacteria condition of dairy products with special reference to market milk. Mich. (A)

A comparison of the effects of clarification and filtration on market quality of milk. Mich.

Clarification v. filtration of milk. N. Y. State.

The pasteurization of milk in the final container.--To study the efficiency of a commercial method of pasteurizing in the bottle and to study methods of cleaning, rinsing, and sterilizing bottles and other steps in the process which might influence its efficiency. Okla.

Efficiency of pasteurization.--To study the destructive action of heat on bacteria during pasteurization. Ill.

Studies of milk plant practices. N. Y. Cornell.

Experiments in market milk and testing dairy products. (Davis Substation) Calif.

Clean milk making in small units.--Study of the feasibility of making milk of a grade approximating that of certified milk in a small unit and under Vermont conditions. Vt.

DAIRY PRODUCTS--Milk. Composition, Handling, and Marketing.

The effect of the bacterial content of milk powders upon their keeping qualities. Minn.

Physico-chemical factors involved in the clotting of milk by rennet. Minn. (A)

Factors concerned in the coagulation of milk by heat. Wis.

A study of factors influencing colors and flavors in milk. Md.

Studies on the bacterial flavors and odors of milk. Iowa.

The study of wild garlic and its elimination from milk. W. Va.

Onion flavor in milk.--To find some practical means of eliminating the onion flavor from milk. N.C.

Enzymes of milk and their relation to abnormal fermentation. Minn. (A)

The toxicity of milk. Iowa.

Biochemical studies of milk. N. Y. Cornell.

The chemistry of the formation and manufacture of dairy products and factors influencing milk production and the composition and properties of milk. Minn. (A)

The influence of commercial condensing processes upon the vitamin content of cows' milk. Pa. (A)

The deleterious effects of frozen milk on baby chicks and on the marketability of milk and cream. Mo.

Factors influencing the vitamin content of milk. Minn.

Factors influencing the manufacture of commercial buttermilk. Okla.

Investigation in the manufacturing of commercial buttermilk, (a) prevention of wheying off, (b) propagation of commercial cultures. Wis.

The chemical and physical properties of powdered milk, and determination of the factors influencing the keeping quality of whole milk powder. Minn.

Carbonation of dairy products.--To study the influence of carbon dioxide on germ life in dairy products and to ascertain the commercial value of carbonated dairy products. Ill.

DAIRY PRODUCTS--Milk. Composition, Handling, and Marketing. (Cont.)

Fermented dairy drinks.--To study the germs concerned in the preparation of the various fermented drinks, the value (physical and otherwise) such drinks may have, and the development of vitamins by the bacteria in such drinks. Ill.

The effect of mold growth on the butterfat test of composite samples. N.J.

The methylene blue method of estimating the keeping quality of milk. N.H.

A comparison of various commercial tests with the Babcock method for determining the percentage of fat in dairy products. N.Y. Cornell.

A comparison of the Baltimore and composite methods of making milk tests. Md.

The effectiveness of commercial preservatives in composite samples of milk, with special reference to bichloride of mercury. N.J.

Control of city milk supplies. N.Y. State.

Miscellaneous.

Marketing organization investigations. Creamery organization. Minn.

The organization and construction of creameries. Iowa.

Determination of the efficiency obtained in the operation of Iowa cooperative creameries. Iowa.

Experiments in the operation of dairy machinery and equipment. (Davis Substation) Calif.

VETERINARY MEDICINE.

Anthrax.

Anthrax. A study of the disease in general, methods of dissemination, life history of organism, and control. La. (A)

Anthrax prophylaxis by means of agressins. Ark. (A)

Cattle Diseases. (See also specific diseases.)

Infectious abortion in cows.--To produce a serum that will protect pregnant animals against infectious abortion. Ind.

Investigation of contagious abortion in given herds. Wis.

VETERINARY MEDICINE--Cattle Diseases. (Cont.)

- A study of abortion in University Farm cattle. (Davis Substation) Calif. (A)
- Infectious abortion in cattle. (a) Laboratory studies, (b) study of the cause of infection and methods of control in several herds, and (c) oral infection studies. Conn. Storrs. (A)
- Infectious abortion and the diseases of the reproductive organs of cattle. Minn. (A)
- A study of immunity and the carrier problem in bovine abortion. Calif. (A)
- The vaccination of heifers in herds infected with bovine infectious abortion.--To determine the immunizing effect in heifers of breeding age, of subcutaneous inoculation with live cultures of Bacillus abortus. Ind.
- Contagious abortion in cattle.--To determine a means of controlling bovine infectious abortion. Mich. (A)
- Studies on abortion disease in cattle. Effect of living organism (Band) vaccine upon the reproductive function. Del.
- A study of outbreaks of bovine infectious abortion and their control.--To collect data relative to the origin of herd outbreaks of bovine infectious abortion, the relation of the ration fed to abortion, and general sanitary control measures. Ind.
- Studies in abortion disease in cattle. Eradication of abortion disease by isolation. Del.
- Contagious abortion and sterility in cattle. Wash.
- Investigation of contagious abortion, including the study of sterility as a sequel to abortion infection. Wyo. (A)
- The pathology and bacteriology of sterility in cattle. Minn. (A)
- Sterility in cattle. Del.
- The bacterial flora of the normal vagina and uterus in cattle. Minn. (A)
- Investigations of the bacterial flora of apparently normal udders in dairy cows. S. Dak.
- The effects of pituitrin in cows with delayed parturition due to uterine inertia. Minn. (A)

VETERINARY MEDICINE--Cattle Diseases. (Cont.)

Studies of retained placenta in cattle. Del.

Diseases of the reproductive organs of cattle. Mich.

The function of the corpus luteum in pregnancy. Minn. (A)

The cause of skin lesions in cattle which have reacted to the tuberculin test. Wis.

Dysenteric affections of cattle in North Dakota.--To determine the distribution, frequency, and seasonal relationship and the causal relationship of intestinal coccidia to such affections. N. Dak.

Infectious diarrhea of cattle.--To determine the cause of the disease, manner of transmission, life history of the microorganism causing the disease, and the measures necessary for its control or eradication. Ia. (A)

Diarrhea in cattle, with special reference to infectious bacterial enteritis (Johne's disease), black diarrhea, bloody flux, and diarrhea of parasitic origin. Ky.

Diagnosis and eradication of Johne's disease. Wis.

Infectious white scours and calf pneumonia. Minn. (A)

Red water in cattle. (Cystic Haematuria). Wash.

The application of the benzoate renal functional test to nephritis in cattle. Minn.

Infection of cattle with avian type of Bacillus tuberculosis. Wyo. (A)

Coccidiosis in cattle. Mont.

Congenital epithelial defects of calves. Wis.

A study of an obscure disease of cattle on the range. Wyo. (A)

Cattle loin disease in the Coastal Plains of Texas. Tex. (A)

Hemorrhagic disease in cattle. Nev. (A)

Lung worm in calves. W. Va.

Control of calf lung worm. W. Va.

Effect of diseases in the cow on milk.--To determine the rôle played by milk both in the spread of disease in cattle and causation of unfavorable symptoms of diseases in man. Mich. (A)

VETERINARY MEDICINE--Goitre and Hairlessness.

Hairless pigs and hairlessness in newborn animals. Mont.

Hairless litters.--To determine the cause or causes of hairless litters; to learn whether particular breeds or families of swine are especially susceptible; to study the habits, degree of vigor, longevity, gestation period of hairless litters, and the peculiarities of individual hairless pigs; to study the iodine treatment for hairlessness. N. Dak.

Influence of conditions of environment: High protein feeding and constipating diets on the development of hairless pigs. Wis. (A)

The iodine content of Idaho-grown foods in relation to the prevalence of goitre. Idaho.

Hemorrhagic Septicemia.

Variation of the pathogenicity of members of the hemorrhagic septicemia group of bacilli. S.Dak. (A)

A study of the pathogenicity as well as antigenic and biologic properties of the organisms belonging to the hemorrhagic septicemia group. Nebr. (A)

Hemorrhagic septicemia agressin.--To determine if natural and artificial hemorrhagic septicemia agressins of protective value can be produced. Ill.

Hog Cholera. (See also Serum Production.)

An experimental study of hog cholera and the factors concerned in immunity against the disease. Mo.

The effect of the simultaneous method of immunizing swine against hog cholera on the subsequent growth of the animal. N. J.

Experimental study of hog cholera virus. Hog cholera exposure experiment.--To determine the length of the period that a hog which has recovered from cholera may act as a carrier of the disease and to determine the length of time that cholera virus may live outside of the hog's body and the relation of stable files to the distribution of the disease. Ind. (A)

To obtain the percentage of double treated hogs that may later become susceptible to cholera; to find the proper age that pigs may be immunized by the double treatment, and length of time immunity of double treated pigs may be expected to last. Md.

VETERINARY MEDICINE--Hog Cholera. (Cont.)

Experiments on the viability of hog cholera virus. Mo.

Microscopical and cultural examination of hog cholera blood.--To study the hog cholera virus and the relation of invading organisms to hog cholera. Ind. (A)

The isolation and cultivation of the specific microorganism of hog cholera and the investigation of methods of treatment based upon a vaccine. Ky. (A)

To determine the age at which pigs from immune mothers become susceptible to hog cholera. Md.

A record of the results of hog cholera immunization at the University Farm. (Davis Substation) Calif.

Horse Diseases. (See also specific diseases.)

Swamp fever (infectious anaemia) of horses and mules. Tex.

Transmission of swamp fever in horses. Wyo. (A)

Contagious abortion of mares and pyaemic arthritis of foals. Minn.

Pathology and bacteriology of the reproductive organs of the mare and their relation to sterility. Ky. (A)

Infectious Abortion. (See the specific animals and Serum Production.)

Contagious abortion. Colo.

Contagious abortion investigations. Mo.

A comparative study of Bacterium abortum from bovine and porcine sources. Wis.

Abortion infection experiments with young calves. A study of the location of Bacterium abortum organism in the bodies of calves drinking artificially infected milk, and the effect of the ingestion or withdrawal of colostrum as a factor. Calif. (A)

Abortion diseases investigations. Studies of pathological lesions. Studies of blood tests and attempts to induce immunity. Kans.

The relative importance of the generative tract as a channel of infection in bovine infectious abortion. Minn. (A)

VETERINARY MEDICINE--Infectious Abortion. (Cont.)

Field experiments with contagious abortion vaccine. Wis.

The value of immunizing agents in the control of bovine infectious abortion. Minn. (A)

The serological and complement fixation tests in infectious abortion in cattle. Minn. (A)

Immunizing horses and cattle against contagious abortion. Ky. (A)

The elimination of Bacillus abortus in milk. Minn. (A)

Methods of cultivation of Bacillus abortus. Minn. (A)

Necrobacillosis.

Necrobacillosis. A study of the various activities of Bacillus necrophorus. Wyo. (A)

Parasites. (See also Sheep and Goat Diseases, Poultry Diseases, and ECONOMIC ENTOMOLOGY--Parasites, External.)

Insects injurious to livestock. Ia.

Animal parasites. Ky.

A study of common parasites in animals. Wis.

The endoparasites of man and domesticated animals. Minn.

An inquiry into the prevalence, extent of infestation, economic significance, and methods of control of the pathogenic parasites of food animals. Mich. (A)

Parasites of sheep. W. Va.

Insects and internal parasites affecting livestock--the blowfly, screw worm, and goat louse. Tex.

A study of the life history of the stomach worm of sheep, its effect on the blood of sheep, and methods of remedial treatment. Conn. Storrs.

Stomach worms in sheep.--To determine the effect of grazing crops, high feeding and specific antidotes for preventing and ridding sheep of stomach worms. N. C.

VETERINARY MEDICINE--Parasites. (Cont.)

A comparison of several treatments for stomach worms in lambs, with special reference to subsequent growth and development of treated and untreated lambs. Minn.

Life cycle of Moniezia expansa. Wyo. (A)

A study of the life history of the kidney fat worm, Stephanurus dentatus, in and out of swine and, in connection therewith, the pathological action on swine. Ala.

Poultry parasites. (Davis Substation) Calif.

A study of intestinal parasites in poultry. N. J.

The feather mite of poultry and its control.--To determine the facts concerning the identity, life history, source of infestations, distribution in Indiana, means of spread, economic importance, prevention, and eradication of the so-called feather mite, Liponyssus silvarium. Ind.

Observations on the occurrence of oocysts of Eimeria avium in the cecal contents of the domesticated fowls. N.J.

A biological study of Dispharagus nasutus Reed, a roundworm affecting game birds. N. Y. Cornell.

Flukes of the genus Collyriclum as parasites of poultry. Minn.

Horseflies (Tabanidae). Minn.

Study of derris and related insecticides for control of external parasites of domesticated animals. Minn.

Poisoning and Poisonous Plants. (See also CHEMISTRY.)

Causes of forage poisoning. Ark.

Forage poisoning in horses. Colo.

Forage poisoning. Miss. (A)

Forage poisoning: Field and laboratory investigation of the nature and etiology of forage poisoning.--To discover new facts relative to the cause and extent of forage poisoning and extend the present information by demonstrating the preventative and curative properties of botulinus serum. Ind.

VETERINARY MEDICINE--Poisoning and Poisonous Plants. (Cont.)

Food poisoning.--To prepare an antitoxin for the C type of the botulism organism. Ill.

Poison plants of our grazing ranges. Ariz.

Poisonous plant investigations.--To determine if *Drymaria* is poisonous to cattle. N. Mex.

Poisonous range plants, including *Tetradymia glabrata*, *Atriplex canescens*, and *A. confertifolia*, *Halerpestes cymbalaria*, *Artemisia spinescens*, and four species of lupines. Range management in relation to poisonous range plants. Nev. (A)

Food poisoning in sheep and cattle. Active principle of whorled milk-weed. Colo. (A)

Loco eradication and loco poisoning. Mont.

Poultry Diseases. (See also specific diseases.)

Poultry disease investigations. Wis.

Poultry disease and pest control. Eliminating disease and pests from the poultry flock. N. Dak.

Investigation of colds (roup), canker (avian diphtheria) and chicken pox (epithelioma contagiosum). (Petaluma Substation) Calif.

Bacterium cold infection in poultry. Del.

Studies on bacillary white diarrhea in poultry. Del.

Bacillary white diarrhea.--To determine the efficacy of the serum agglutination test as an aid in eradicating bacillary white diarrhea. Ill.

Bacillary white diarrhea of chicks. Conn. Storrs.

Investigation of bacillary white diarrhea.--To determine facts regarding the origin and spread of bacillary white diarrhea and to study the means of definitely recognizing the disease. Ind.

Genetic studies of resistance of chicks to bacillary white diarrhea. Ill. (A)

A study of white diarrhea in chicks. R. I. (A)

An investigation of white diarrhea in fowls, with special reference to improving methods for its control. Va.

VETERINARY MEDICINE--Poultry Diseases. (Cont.)

Fowl cholera.--To study the origin and spread of outbreaks of fowl cholera and to test the value of vaccine for cholera. Ind.

A complete investigation of fowl cholera, with emphasis on control methods. N. J.

Eradication of gapes on the farm. W. Va.

Poultry diseases. (a) To determine the value of vaccination as a means of controlling chicken pox; (b) to study bacillary white diarrhea as it affects the adult bird. Mich.

Relationship between chicken pox and various forms of roup, such as "swell head", colds, and canker, and the preparation of a vaccine for these conditions. Ind.

Preventative vaccination for chicken pox. Preparation and testing of a vaccine for the prevention of chicken pox and securing accurate data as to its protective properties. Ind.

The bacteriology of secondary invaders in roup and chicken pox. Del.

Studies on vaccine treatment of roup. Del.

The value of vaccination with an autogenous bacterin for roup in chickens. Wyo. (A)

Poultry disease investigations. Studies of pure culture bacterial vaccines for roup and fowl typhoid. Studies of white diarrhea. Kans.

Relation between adequacy of diet and immunity to roup. Kans.

Diseases of poultry, including (a) transmission of avian tuberculosis through eggs of tuberculous fowls, and (b) entero-hepatitis. Minn.

Investigations of septicemic diseases among fowls in North Carolina. N. C. (A)

Investigation of parasitic diseases of poultry other than blackhead. Calif.

Relation of soil reaction to infectious poultry disease organisms. N.J.

Studies of the life histories of the chick tapeworm (Choanotoenia infundibuliformis) and the chick nematode (Heterakis perspicillum). Kans. (A)

Embryology of cestodes. House flies as an agent in disseminating fowl tapeworm. Kans.

VETERINARY MEDICINE--Poultry Diseases. (Cont.)

The life history and methods of control of the chicken nematode, Heterakis papillosa. Minn. (A)

A study of intestinal disinfectants for poultry. R. I. (A)

Green food v. antiseptics as a preventative of intestinal disorders of growing chicks. Ind.

Summer intoxication of poultry.--To determine facts regarding the toxic-like conditions especially prevalent during the summer. Ind.

Study of a nervous disorder in adult fowl causing paralysis in limbs or blindness. R. I. (A)

Miscellaneous poultry disease investigations in California at the Avian Pathology Laboratory at Petaluma. Calif.

Study of the general pathology of the fowl, including a study of the physiology of the fowl, a comparative study of the anatomy of domesticated fowls, and a general study of fowl parasitism in North Carolina. N. C.

Blackhead in turkeys and methods for its control. (Davis Substation) Calif.

Blackhead in turkeys. (Davis and Petaluma Substations) Calif.

Blackhead disease of turkeys. R. I. (A)

Study of blackhead in turkeys. Conn. Storrs. (A)

The diagnosis of poultry diseases occurring in New Jersey. N. J.

The influence of castration, sterility, ovulation, and organ transplantation on internal secretion in the domestic fowl. Me. (A)

Serum Production, Vaccines, Bacterins, and Antitoxins.

Serum production. Nebr.

Serum production: Investigation of methods of manufacturing Dorset-Niles anti-hog cholera serum.--To improve methods of producing anti-hog cholera serum and to maintain such relation with cholera outbreaks and use of anti-hog cholera serum in the field as will enable the observation of field conditions as they relate to hog cholera vaccination. Ind.

The preparation and distribution of biological products. Ky.

VETERINARY MEDICINE--Serum Production, Vaccines, Bacterins, and Antitoxins.
(Cont.)

The efficiency of anti-abortion vaccines. Ark.

Cost of producing anti-hog cholera serum.--To determine the actual cost of producing hog cholera serum. Ind.

Distribution of anti-hog-cholera serum. Mo.

Sheep and Goat Diseases. (See also specific diseases.)

Management for the control of nodular disease in sheep. Ohio.

Progressive pneumonia in sheep. Mont. (A)

A study of swell head of sheep and goats. Tex. (A)

Sheep gadfly. Grub in head. Sheep rot. W. Va.

Stomach worms in sheep and goats. Experiments with a view to ridding the animals entirely from the worms in such a manner as to involve the minimum amount of labor. Tex.

Life history of Sarcocystis tenella, parasitic in the muscles of sheep. Wyo. (A)

Life cycle of Thysanosoma actinioides, a common tapeworm of sheep. Wyo. (A)

Study of the sheep scab. The sheep scab mite; its life history and eradication. Tex.

Sheep losses in feed lots. Colo.

Swine Diseases. (See also specific diseases.)

Abortion in swine.--To determine the efficacy of abortion vaccines in the prevention of infectious abortion in swine. Ill.

Investigation of cause and control of infectious abortion in swine. Wis.

Distribution of abortion infection in swine by positive reacting immune carriers. Mo. (A)

Immunization of sows against infectious abortion and further studies on the etiology of the disease. Ky. (A)

VETERINARY MEDICINE--Swine Diseases. (Cont.)

Hog cholera and closely allied infectious swine diseases: (a) Chemical analysis of blood of swine affected with hog cholera; (b) experiments to determine the virulence and longevity of hog cholera virus in relation to the sixty day expiration date. N. Dak. (A)

Identification of bacteria causing "mixed infections" diseases of swine and a study of their pathogenic properties. Ind.

Dysentery of swine.--To determine the cause and prevalence of dysentery. Ind.

Diseases of swine with special reference to infectious diarrhea. Ky.

A study of hernias in swine. Wis.

Study of rickets in swine. Ohio.

The dietary relationships and pathology of stiffness or "posterior paralysis" of swine. N. Y. Cornell.

To study the causes and lesions of swine that have posterior body and lumbar paralysis. Ala.

Tuberculosis.

Tuberculosis experiments, including (a) types of swine tuberculosis; (b) pathogenicity of avian tuberculosis for swine; (c) transmission of avian tuberculosis (1) to cattle, (2) to field mice, (3) to barn mice, and (4) to common rats; (d) occurrence of tuberculosis in pigeons; and (e) its control and eradication in farm poultry flocks. N. Dak.

Tuberculosis of farm animals. Wis.

Cooperative experiments in the control of bovine tuberculosis. Calif.

A study of the causes and means of preventing the spread of tuberculosis in cattle and hogs in California. Calif.

Vaccination against tuberculosis. Wis.

Tuberculin tests. Studies on artificial sensitization of healthy cattle; whether certain types of cases are liable to react to one test and not to another; temperature as affected by other factors than tuberculin character; intradermal reaction in relation to extent and character of lesions; whether the intradermal is apt to fail in advanced cases and where the resistance of the body has been broken down; the possible inhibition of the intradermal reaction by a simultaneous thermal reaction. Minn.

VETERINARY MEDICINE--Tuberculosis. (Cont.)

The intradermal tuberculin test for detecting tuberculosis in cattle. Calif.

Tuberculin testing of cows in certified dairies. Calif.

Transmissibility of avian tuberculosis to swine and calves.--To determine the relation of tuberculosis in fowls to the disease in swine and calves. Ill.

The intertransmissibility of avian and mammalian tuberculosis. N. Dak.
(A)

The relation between avian tuberculosis and swine tuberculosis. Wis.

An inquiry into the possible relation of avian tuberculosis to the tuberculosis of swine. Nebr. (A)

Dairy herd management. Tuberculosis eradication. N. Y. State.

Miscellaneous.

Insects affecting the health of animals. Wyo.

Texas fever immunization work. Tex.

A study of fatal hemorrhage, evidently resulting from sweet clover hay and silage. N. Dak.

Physiology of gastric digestion in ruminants and the pharmacology and therapeutics of the ruminant stomach. N. Dak.

The chemistry of the blood and urine of animals affected with specific and obscure diseases. Minn.

A study of the relation of ozone to animal diseases. Md.

Diseases of farm animals. Death of animals and cases of serious sickness at University Farm, Davis. Calif.

Diagnosis of animal diseases.--To assist veterinarians and stockmen in diagnosing outbreaks of disease, and securing material for investigational work. Ind.

Miscellaneous investigations of diseases of animals other than poultry. Calif.

Animal diseases.--To investigate important animal diseases as necessity may arise. Colo.

VETERINARY MEDICINE--Miscellaneous. (Cont.)

Venereal form of lip and leg ulceration. Mont.

The cause of distemper in dogs. Ala.

A study of the hookworms of the dog and the domesticated fox. Minn.

Alkali disease. S. Dak.

The effect of iodine fed pregnant ewes or sows upon the size, vigor, bone, and coat of the offspring. Iowa.

Laboratory and field diagnosis of animal diseases. Ky.

Investigations of obscure diseases (involving the examination of 1237 specimens). Minn.

Miscellaneous veterinary observations. Mont.

Miscellaneous diseases of farm animals. Kans.

AGRICULTURAL ENGINEERING.

Clearing Land.

Land clearing investigations. (a) Brush plowing, (b) power requirements for stump removal, (c) studies on time of brushing and seeding cut-over land, (d) use of war salvage explosives in land clearing, (e) factors affecting the efficiency of explosives, and (f) number of cleared acres required in northern Wisconsin to support a farm. Wis.

Land clearing. General study of methods and results. Oreg.

Methods of clearing hogged-off hill land and tide land. (Astoria Substation) Oreg.

Investigations in land clearing methods and equipment. New methods and implements used in clearing land, stump pullers, tractors, and various combinations of methods and equipment, such as dynamite plus the stump puller, dynamite plus the tractor, use of dynamite before and after pulling, use of livestock and of fire, large and small scale clearing under farm conditions. Minn.

Land clearing methods. (North Central Substation, Grand Rapids) Minn.

Method of clearing cut-over land. Mo.

Land clearing with goats. Oreg.

AGRICULTURAL ENGINEERING--Clearing Land. (Cont.)

Investigations in methods of stone removal. Minn.

Investigations in cost of land clearing.--To determine the cost of clearing, best methods of preparing newly cleared land for cultivation, and the first crops that can best be raised on the various types of soil. (Duluth) Minn.

Investigations in costs and methods of clearing State lands. Minn.

Land clearing.--To determine the cost and best methods of preparing cut-over land for crop use. Mich.

Land clearing. Use of explosives; method for blasting stumps; and cost of burning stumps. Ala.

Investigations in power necessary for pulling stumps. Minn.

Investigations in developing newly cleared land. The kinds of plows best adapted to various soil types, hours of labor required for various operations, methods and cost of stone and root picking and comparison of efficiency of disk and plow for preparation of seed bed for first crop. (Duluth) Minn.

Investigations in plowing underbrush. Minn.

Drainage.

Farm drainage investigations. Va.

Studies in farm drainage. (Delta Substation) Miss.

Drainage systems. A study of different practices followed over the State and their effectiveness. Mont.

Experimental concrete drain.--To study the action of concrete tile in acid soil of Coastal Plain. N. C.

Investigation of causes of failures of agricultural drain tile, the means of obviating such failures and mapping areas where extra precautions are necessary. Minn.

Ground water and tile drainage experiments.--Collecting data on ground water level fluctuations in soils of different types drained by tile lines laid at various depths. (Wenona) W.C.

Drainage of "grease wood lands" to remove alkali and management to restore the structure of such lands. Oreg.

AGRICULTURAL ENGINEERING--Drainage. (Cont.)

Study of water table and outflow on "white land" and effect of clover, lime, and manure on percolation. Oreg.

Drainage by pumping from sump or well. (Delhi) Calif.

Drainage investigations. (a) Settling of peat after drainage, (b) the development of a marsh plow for breaking new land, and (c) studies in subsoil as a factor in drainage design. Wis.

Methods and costs of drainage installation, and correlation of land and crop values with cost of drainage. Minn.

Drainage and reclamation of tide lands, especially investigations as to drainage systems. (Astoria Substation). Oreg.

Drainage and improvement of wet lands. Drainage of tide lands. Oreg.

Drainage.--To improve drainage practice and agricultural conditions. Mich.

Creek runoff measurements.--To determine the proper runoff factor to be used in design of drainage improvements on a typical Piedmont stream; to record the rates of runoff and rainfall. N. C.

Studies in various phases of drainage in California. Calif.

Farm Buildings and Equipment.

Farm buildings.--To study the types of frame and planning of farm buildings from an economic and sanitary standpoint. Mich.

Investigations of farm buildings. Plans of farm buildings prepared by the farm building section. Minn.

Farm building plans. Ark.

Farm structures. N. Dak.

Rural home design for the warm interior valleys of California. (Davis Substation) Calif.

Structures and building equipment for fruit and vegetable farms. (Davis Substation) Calif.

Investigation of cheap shelters for the farm straw sheds. N. Dak.

Farm building ventilation. Minn.

AGRICULTURAL ENGINEERING--Farm Buildings and Equipment. (Cont.)

Comparison of efficiency of King and Eutherford systems of ventilation.
Wis.

Heating and ventilating of homes, including installation and operating
data. Minn.

Humidifying air in buildings. Colo.

Masonry arch barn construction. Iowa.

The equipment for storing and handling of manure. (Davis Substation)
Calif.

Equipment for livestock feeding and management. Iowa.

Economic arrangement and rearrangement of dairy barns. N. Y. Cornell.

Structures and building equipment for California dairy farms. (Davis
Substation) Calif.

Dairy barn floors. Iowa.

A study of dairy barn ventilation. N. Y. Cornell.

Effect of temperature and humidity on the dairy cow. N. J.

Experimental silos. (Judith Basin and North Montana Substations) Mont.

Treatment of silo walls. Iowa.

Trench silo investigation. N. Dak.

Use of explosives in constructing the trench silo. N. Dak.

Creamery buildings. Iowa.

Housing purebred poultry. Ky.

Poultry house ventilation and construction. Nebr.

The effect of ventilation and confinement on winter egg production and
disease prevention. Ky.

Air requirements of poultry. A study of ventilation of different types
of poultry houses. Iowa.

Factors governing temperature and humidity of poultry buildings, with
special reference to their effect on the health of males and the egg
production of females. N. Y. Cornell.

AGRICULTURAL ENGINEERING--Farm Machinery.

Farm machinery. Ala.

Farm machinery and equipment. N. Dak.

Farm machinery.--To study the various farm machines with a view to increasing their efficiency and determining their adaptability. Mich.

A survey of farm machinery conditions in Arkansas including types of machinery used. Ark.

Experimental methods and machinery investigations. Iowa.

Power machinery.--To study the operation and cost, efficiency, and adaptability of stationary engines, tractors, and accessories. Mich.

Standardization of farm machinery. Iowa.

Draft test of farm machinery. Iowa.

Draft of farm implements. Farm power. Mont.

Investigations to determine the draft of various farm implements and the cost of different operations with them; to determine the draft of various tillage and other farm implements, the effect of different soil types on draft, and the effect of the different treatments of soils on the draft of various implements; also to determine the cost of different operations, the draft of a single disk per foot of width, and effect of single and of double disking before plowing. Mo.

Development of a hydraulic dynamometer for testing draft of tillage implements. Wash.

Plow draft investigations. Nebr.

Plow draft studies.--To study the draft required for plowing the different soil types and the effect of crop rotation and soil treatment in the draft. Ill.

The draft of wagons. Mo.

The rodrow thresher. (Davis Substation) Calif.

Threshing studies.--To determine factors affecting the efficiency of threshing small grains. Ill.

AGRICULTURAL ENGINEERING--Farm Machinery. (Cont.)

Threshing machine studies: (a) Efficiency of grain separators, (b) relative merits of large and small threshing rings, (c) efficiency of custom and cooperatively owned outfits, (d) to investigate threshing rings. Ill.

Static electricity as a probable cause of smut explosions and threshing machine fires. Wash.

Tractor farming. Mont.

Investigations of farm tractors. Minn.

Economic study of farm tractors. Mont.

The status of the farm tractor.--To study the economic results of the farm tractor as operated under average Indiana conditions. Ind.

A study to determine the fundamental factors influencing traction of wheel tractors. Ala. (A)

Tractor tests. Nebr.

Miscellaneous tests of tractors and farm machinery: (a) Air devices for internal combustion engines, (b) bearing wear in engines, (c) grain dusting machinery, and (d) almond harvesting machinery. (Davis Substation) Calif.

The determination of the slippage of various types of wheel equipment. Ind.

Power requirements for belt machinery. The design and accessories of silo fillers, threshing machines and other belt-driven machinery as affecting power requirements. Speed as a factor of efficiency. Wis.

Silo filling studies. A study of the factors affecting economy in filling silos, cost, and amount of labor required. Ill.

A study of tandem horse hitches.--To determine the practicability of various sizes and types of tandem hitches and the best dimensions for the various parts of which they are constructed. Ill.

Implements used in the cultivation of corn.--To study the relative efficiency of different kinds of implements used in cultivating corn. Ill.

A study of limestone spreaders. Iowa.

Design and test of burner for destroying weeds, such as foxtail grass in alfalfa, and for other uses. (Davis Substation) Calif.

Seed cleaning investigations.--To determine the best combination of screens and sieves, wind blast and rate of feeding for cleaning red clover, alsike, sweet clover, alfalfa, and timothy seed. Ill.

AGRICULTURAL ENGINEERING--Farm Machinery. (Cont.)

The study of milking machines. Iowa.

Milking machines.--To study the influence of the various ways milking machines are handled on the bacterial contamination of milk and to work out a procedure of handling adapted to the average farm. Ill.

A study of the antifreezing properties of solutions of honey and other sugars in the cooling systems of automobiles and other internal combustion engines. N. Y. Cornell.

Testing of lubricating oils. Colo.

A study of some of the properties of several commercial brands of lubrication oils for internal combustion engines. N. Y. Cornell.

Air cleaning. Ala.

Farm Power.

Farm power studies. Ill.

Study of the horse as a motor. Iowa.

The use of electricity on the farm. Mich.

Utilization of electricity in agriculture. Minn.

Study of electric power used on farms. Ill.

The availability of electric power on the farm. Wis.

Electrical power from the wind. Iowa.

Hydroelectric farm plants. Minn.

Design of a windmill of the hollow cup, horizontal type for farm lighting purposes.--To design a horizontal windmill for use in developing electricity. Ind.

Preliminary design of a windmill of the hollow cup, horizontal type for farm lighting purposes. Ind.

Wind power electric lighting plants. Minn.

AGRICULTURAL ENGINEERING--Farm Water Supply, Sewage Disposal, and Sanitation.

Rural sanitation. (Davis Substation) Calif.

Farm sewage disposal. Minn.

Sewage disposal. Mont.

Investigation of the biology of sewage disposal.--To find out how sewage may be disposed of with a reduced amount of water and end product containing the waste materials in a commercial form. N. J.

Investigation of farm septic tanks.--(a) Relation of length, width, and depth of tank to efficient operation, (b) most efficient size for a given quantity of sewage, (c) relative efficiency of the single-chamber tank and those of more than one chamber, (d) flow of farm sewage. Ill.

An investigation of sanitary conditions on farms and experiments to determine the best types of sanitary equipment.--To determine the actual sanitary conditions as they exist on typical farms, and the economy and efficiency of different kinds of sanitary equipment. Mo.

Development of farm water systems. Ark.

Efficiency tests of electric-driven water systems including operating costs. Ill.

Design and installation of farm water systems. Idaho.

Treatment of alkali and other waters for domestic use. Colo.

Irrigation.

Principles of soil moisture in relation to irrigation. (Davis Substation) Calif.

Irrigation investigations. Mont.

Irrigation experiments. Investigations to determine best length and width of borders for "border irrigation". (Hermiston Substation) Oreg.

Use of irrigation water. Wash.

Border irrigation. (Irrigation Substation) Wash.

Duty of water. Mont.

Evaporation and duty of water. Ariz. (A)

AGRICULTURAL ENGINEERING--Irrigation. (Cont.)

Duty of water studies in the Las Vegas Valley of southern Nevada. A study of the economical use upon special crops and on suitable soils of small heads of water from artesian wells or pumped from underground supplies, together with certain engineering data on the cost of pumping, on desirable cement constructions, and on methods and cost of well drilling. Nev.

Duty of water. Amount of irrigation water for best results with wheat, oats, barley, peas, alfalfa, sunflowers, and other less important crops. (Burns Substation) Oreg.

Duty of water studies on cabbage, potatoes, corn, alfalfa, and grapes. N. Mex.

Irrigation experiments. Duty of water for major crops with varying depths of application and applications at different intervals. (Hermiston Substation) Oreg.

Duty of water investigations. Studies as to duty of water for different soils and crops on the main irrigated sections of Oregon. Oreg.

Pumping for irrigation, canal improvement, and ground water investigations. Utah.

Use of irrigation water on the University Farm including observations on the fluctuation of the underground water table (Davis Substation) Calif.

Seepage in the Gallatin Valley. Study of underground water levels. Mont.

Cost of pumping irrigation water. Laboratory test. Mont.

An investigation of irrigation pumping machinery. Ariz. (A)

Pumping from wells. Mont.

Ground water investigations. Principles of ground water recharge, movement, and escape or use, especially escape through transpiration. Ariz. (A)

Ground water studies in the middle Upper Rio Grande Valley, New Mexico. Preliminary investigation for the purpose of determining the source of seepage water, location of drains, size of drains, and assistance towards the organization of drainage districts. N. Mex.

AGRICULTURAL ENGINEERING--Irrigation. (Cont.)

Ground water studies in the Mesilla Valley, New Mexico.--To determine the cause of the rise of the ground water, rate of rise, and approximate damage done. N. Mex.

Ground water development. An investigation of the valleys of the State and to map the same to show where artesian water is available for irrigation and for culinary purposes. The pressure of the water, the flow of the wells, and the nature of the supply reservoir are studied for all artesian well districts of the State. Utah.

Feasibility surveys. Surveys of proposed irrigation and proposed drainage projects to determine their feasibility agriculturally. Oreg.

Venturi flume: Its perfection and calibration for the measurement of water flowing in open channels. Colo. (A)

Measurement of irrigation water. (Davis Substation) Calif.

Measurement of water as applied to irrigation. Colo.

Orchard irrigation studies. (Davis Substation) Calif.

Orchard and vineyard irrigation studies. (Delhi Substation) Calif.

A study of the irrigation requirements of prune, apricot, peach, and walnut trees. (Davis Substation) Calif.

Irrigation of an old almond orchard for the purpose of rejuvenating the trees. (Davis Substation) Calif.

Irrigation of bearing walnut groves. (Riverside Substation) Calif.

Duty of water on grapes.--To determine the best amounts of water to use and the best time of application. N. Mex.

Overhead irrigation of strawberries.--To study costs and profits in the use of an overhead irrigation system in strawberry growing. Ill.

The irrigation of market garden crops with regard to profitableness. Tenn.

Irrigation investigations with field crops. (Davis Substation) Calif.

Duty of water for field crops in Sacramento Valley. (Sacramento Valley) Calif.

Duty of water in irrigation in Sacramento Valley. (Sacramento Valley) Calif.

AGRICULTURAL ENGINEERING--Irrigation. (Cont)

Irrigation of alfalfa. (Delhi) Calif.

The irrigation of Pima cotton in the Imperial Valley. (Imperial Valley) Calif.

Cost of irrigation of rice in Arkansas. Ark.

Community irrigation movements in California. Calif.

Irrigation demonstration farm unit.--To show the profit of operating a small intensive livestock farm under irrigation. (Williston Substation) N. Dak.

Irrigation practice at Greenville with sugar beets, potatoes, oats, and alfalfa. Utah.

Water supplies and irrigation in Cochise County. Ariz.

Irrigating waters and soils. A study of the irrigating waters and soils of the State. Ariz.

Comparative irrigation trials.--To ascertain the effects of one normal as compared with two normal irrigations. (Williston Substation) N. Dak.

Materials of Construction.

Farm fences. (Davis Substation) Calif.

The rots of cedar posts and poles. Minn.

Relative durability of creosoted fence posts treated by (a) brushing, (b) dipping, and (c) the open-tank method of creosoting, and set in an experimental line in one of the fences bounding a university wood lot. N. Y. Cornell.

Effect of structure, time of cutting, and method of seasoning of white cedar on the penetration of preservatives. Minn.

Periods required to secure penetration of creosote oil in fence posts of common species of wood when treated by the hot-bath and cold-bath methods. N. Y. Cornell.

Fence post treatment with various chemicals and charring. Mont.

Preservative treatment of fence posts. Minn. Iowa.

AGRICULTURAL ENGINEERING--Materials of Construction. (Cont.)

A study of the methods of prolonging the service of wood fence posts.
Mo.

Investigation of the relative durability of fence post timbers. Ohio.

Durability of posts and methods of fencing in vineyards. Ark.

Comparison of fence posts. Minn.

Preservation of farm timbers. Ala.

Effect of alkali on Portland cement. Mont.

Screen wire durability tests. Wyo.

Road materials of Colorado. Colo.

Shingle nail experiment. Lasting qualities of Western Red Cedar shingles fastened with different kinds of nails. Pa.

Shingle experiment. Pa.

Roofing materials. Iowa.

Concrete blocks for farm buildings. Iowa.

Miscellaneous.

Terracing layouts in Jennings County, Indiana.--(a) To devise practical methods for the prevention of soil washing by means of terraces, (b) to establish the relation between the ground slope and the frequency of the terraces, and (c) to find the practical limits for the fall of a terrace. Ind.

Investigations of the utilization of stump wood for fuel. Minn.

Miscellaneous engineering observations. Mont.

AGROTECHNOL.

Cane Sugar.

A study of the deterioration of sugars as affected by the process used in their manufacture, and by the precautions taken for its prevention.--To determine the conditions upon which the manufacture of sugar conforming to the "factor of safety" depends. Ia. (A)

Microbiological study of the deterioration of cane sugars.--To determine the rôle played by the various groups of microorganisms in causing the deterioration of sugars and to ascertain the factor of safety that must be conformed to in order to prevent their activities. Ia. (A)

Cane juice clarification investigations.--To study the effect of non-sugars, especially coloring matters occurring in the juice of cane or formed during the process of manufacture, on the yield and color of the products, and to devise methods for obtaining maximum yields of white sugar. Ia. (A)

Influence of red rot on the composition of sugar cane.--To ascertain the effect of red rot on the yield and color of sugar cane products. Ia. (A)

Miscellaneous.

Cornstalk sirup investigations. Minn.

RURAL ECONOMICS.

Cost of Production and Accounting.

Cost of production. Wash.

Cost of production studies. Iowa. Oreg.

Cost of production routes. Miss.

Farm organization and cost of production. Statistical route studies. Kans.

Cost accounting investigations on Minnesota farms. Minn.

Farm cost survey. Wis.

Farm cost accounts. W. Va.

Cost account studies on county and district experiment farms. Ohio.

RURAL ECONOMICS--Cost of Production and Accounting. (Cont.)

Complete cost accounts. N.Dak.

Cost studies in farm management. Vt.

Cost accounting investigations on Montana farms. Mont.

Complete cost accounts on New York farms. N. Y. Cornell.

Cost of producing farm products. Nebr.

A study of the cost of producing farm products on representative farms in central and western Kentucky. Ky.

Cost of producing farm products under farm conditions. Mo.

To determine the cost of certain crops from the standpoint of man and horse labor expended. (Caldwell Substation) Idaho.

Cost of producing alfalfa in Malheur County. Oreg.

A study of the distribution and cost of alfalfa production in New Jersey. N.J.

Cost of producing cotton. Tex.

Cost and returns of complementary crops, including pastures, used in the production of tobacco in Kentucky. Ky.

A study of the cost of producing tobacco in Kentucky. Ky.

Cost of producing wheat on dry farms of Columbia Basin. Oreg.

Cost of producing fruits. Minn.

Cost of prune production. Oreg.

Cost of producing strawberries and the place of strawberries in the organization of farms in western Kentucky. Ky.

Cost of maintaining brood mares. Miss.

The cost of horse power, including feed, shoeing, harness depreciation and repair, bedding, and labor for feeding and care. Oreg.

Cost of work horse power on California farms. Calif.

RURAL ECONOMICS--Cost of Production and Accounting. (Cont.)

Cost of maintaining a breeding herd of beef cattle in barn and on pasture. Miss.

Cost of fattening cattle and the relation of the enterprise to the farm business. Nebr.

Cost of producing beef cattle on the range. Colo.

Cost of production of beef cattle.--To determine the cost of producing beef cattle up to one and two years of age. Tenn.

Cost of production of purebred beef cattle. Ark.

Cost of raising purebred cattle. Complete records on the growing of purebred heifers to breeding age. Oreg.

Cost of production and method of breeding, feeding, care and management of baby beef. N.Dak.

Cost of producing beef animals under California range conditions. Calif.

Economic beef production investigation. Ark.

Dressed beef record. Cost of production. (Union Substation) Oreg.

Sheep-raising:- Cost of production. (Sandpoint Substation) Idaho.

To determine the cost in feed and pasture of raising spring lambs and the relative values of the different types of management. Oreg.

Cost of raising lambs to marketable age.--To determine the cost of raising high class market lambs to marketable age and condition, using a purebred Hampshire ram and high grade ewes of Shropshire and Merino blood. N.C.,

Cost of accounting studies.--To furnish data for studying the factors which tend to make dairy farming profitable. Ill.

Crop production based on feed production for a dairy herd. Records of yield and costs of production. (Hettinger Substation) N.Dak.

Cost of raising young dairy stock. Ark.

Cost of growing dairy heifers. Iowa.

A study to determine the feed required and the cost of raising dairy calves. S.C.

RURAL ECONOMICS--Cost of Production and Accounting. (Cont.)

The value of purebred dairy sires and the cost of milk production. Okla.

Cost of milk production on 550 farms. N. Y. Cornell.

Cost accounting. The cost of milk production on Wisconsin farms. Wis.

Cost of milk production in the station herd. Del.

Cost of production of milk and butterfat. Ark.

A study of the cost of operation in the college creamery, in handling milk and in the making of ice cream and butter. Conn. Storrs.

Cost of producing hogs. S.C.

Cost of producing pork. Ill.

To learn cost, including feed and labor, to raise pigs to weaning time or ten weeks old. (Statesville and Kingsboro Substations) N.C.

Cost of fitting show barrows. Oreg.

Cost of production:--To ascertain the cost of production of market eggs and poultry. N.Dak.

To compute the cost of raising a pullet from hatching to maturity (laying age). Pa.

The cost of putting pullets into laying. N.C.

Farm Labor.

Study of farm labor in Wisconsin. Wis.

Distribution of farm labor. Mo.

Farm Organization and Management.

Farm organization. Wash.

Farm organization studies. Iowa.

Farm organization studies on the plains area of northern Montana. Mont.

RURAL ECONOMICS--Farm Organization and Management. (Cont.)

Miscellaneous farm management work. N.Dak.

Miscellaneous farm management observations. Mont.

Economic farm tests. Miss.

A test of grain v. livestock farming. Ohio.

A study of methods of farm organization and practices on livestock farms. Minn.

Study of farm organization and labor income. Miss.

Farm organization. Records on about 500 farms. Oreg.

Farm management survey. The effect of diversity of business on labor income. Nebr.

Detailed farm accounting investigations. A study of the organization and operation of farms, with the view of finding ways and means of securing greater economy in the production of farm products. Ill.

Farm organization and cost of production. Statistical route studies. Kans.

A study of the physical organization of farms. Minn.

Applied farm organization. Plans prepared and installed for 40 farms. Oreg.

Farm management.--To place the unused portion of the farm in condition to produce crops for feed or sale. (Caldwell Substation) Idaho.

Farm organization and costs on farms in the Greeley area. Colo.

A farm organization study in the "Jackson Purchase" area of western Kentucky. Ky.

Investigation of farm organization and labor efficiency on Massachusetts farms. Mass.

An economic study of farming in the hill regions of Chenango and Chataqua Counties from the standpoint of future land utilization. N.Y. Cornell.

Labor income study of 180 farms about the town of Newfane, Niagara County, for the year. (Scoville Substation) N.Y. Cornell.

An economic study of the organization of 550 dairy farms in New York. N.Y. Cornell.

RURAL ECONOMICS--Farm Organization and Management. (Cont.)

Farm organization studies in the Gallatin Valley. Mont.

A survey of 159 farms in southwestern North Dakota. N.Dak.

An agricultural economic survey of crop farming in the Blackland belt of Texas. Tex.

An economic survey of tobacco farms in the bright and dark tobacco regions of Virginia. Va.

An economic study of dairy farming in Montana. Mont.

Factors influencing labor income on poultry farms in New York State. N.Y. Cornell.

Operation of the Van Meter farm. Ky.

Record of farm operations - college farm. Pa.

Record of farms operations - Mitchell farms. Pa.

Notes on the management of the Thompson farm. Pa.

Planning the Iowa farmstead. The arrangement of the buildings for economy of space and convenience, the grouping of certain buildings because of their common or similar use, and the arrangement of trees, shrubs, vines, and flowers to afford comfort and attractiveness to the farm home. Iowa.

Boys' farm management project. Miss.

Farmers' incomes in Minnesota. Minn.

Farmers' Cooperative Organizations.

The formation and activities of farmers' and ranchmen's organizations and mutual associations. Tex.

The farmers' cooperative movement in Minnesota. Minn.

The organization of the Farmers' Supply Service. Minn.

Cooperative agricultural organization. Cooperative marketing of live-stock in Nebraska. Nebr.

Investigations of cooperative marketing and purchasing among farmers in Kentucky. Ky.

RURAL ECONOMICS--Farmers' Cooperative Organizations. (Cont.)

A study of farmers' organizations in Indiana.--To find out the scope and extent of organization among farmers, methods of doing business, their profitableness, and their strong and weak points. Ind.

The organization, functions and business practices of cooperative creameries. Iowa.

Cooperative organizations in New York State. N.Y. Cornell.

Land Settlement.

Methods employed by private agencies in land settlement. Minn.

Settlers' progress study. Colo.

Land Tenure.

Farm tenure. N.Y. Cornell.

Land tenure.--To determine costs, investments, labor incomes, social phases, etc. Nebr.

Farm tenancy. Iowa.

Farm tenancy and utilization of farm land.--To study the problems of landlords and tenants with the view of preparing and publishing forms of leases and making arrangements for landlords and tenants under various conditions and types of farming. N.Dak.

Leasing methods and financial returns on rented dairy farms in New York. N.Y. Cornell.

Share renting methods.--To analyze various renting methods in use and to compare these with the cost of production data from North Dakota. N.Dak.

Study of the relation of agricultural land rents to land values in theory and practice. Tex.

Study of farm leases in Wisconsin. Wis.

A study of the distribution of land ownership and the causes and significance of tenancy in the Blue Grass region of Kentucky. Ky.

Land problems. A study of the physical and productive organization of tenant-operated and owner-operated farms. Ill.

RURAL ECONOMICS--Land Values.

The farm land problems. Land prices, farm mortgages and taxation.
Nebr.

Taxation problems in agriculture. Tex.

Taxation of farm property. N.Y. Cornell.

Taxation problems of agriculture. Mo.

A study of agricultural taxation. Wis.

Taxation of farm land. N. Dak.

Land valuation survey. Iowa.

Studies in land valuation. Iowa.

Methods of land valuation with special reference to Minnesota. Minn.

A study of land values in Kentucky. Ky.

Land utilization. N.Y. Cornell.

Marketing.

Marketing investigations. Colo.

Cooperative marketing investigations. Okla.

Market business practice. Minn.

Marketing organization investigations. Minn.

Investigations of cooperative marketing and purchasing among farmers
in Kentucky. Ky.

Retail distribution of feeds in New York. N.Y. Cornell.

Marketing farm products.--To collect and analyze data on organizations
marketing farm products and on marketing practices with reference to
North Dakota marketing problems. N.Dak.

Merchandizing and advertising farm products.--To outline the marketing
and advertising methods and practices of farmers' cooperative market-
ing organizations and to give details for advertising and merchandiz-
ing products by individual farmers. N.Dak.

RURAL ECONOMICS--Marketing. (Cont.)

Marketing survey of food products in various counties of Pennsylvania. Pa.

Marketing of Wisconsin farm products. Studies of the marketing of cheese, butter, potatoes, milk, livestock, and canned peas completed. Investigations now being conducted on the marketing of wool and cherries. Wis.

Production, distribution, and marketing study of food products for Roanoke City and its surrounding farm supply areas. Va.

Supply methods of marketing and consumption of food in West Virginia cities and agricultural production in nearby territory. W.Va.

Investigations of the grain trade of Iowa. Iowa.

Marketing organization investigations. A study of grain commission merchants. Minn.

Marketing grain.--To secure data on the number and distribution of elevators in North Dakota and the amount of elevator and farm storage space, to locate successful and unsuccessful farmers' elevators and a study of their business practices and of the markets and market opportunities of durum wheat. N.Dak.

Hay marketing. N.Y. Cornell.

An economic study of the costs and methods of marketing hay at country shipping points. N.Y. Cornell.

Marketing Michigan potatoes. Mich.

Marketing organization investigations. Local potato warehouses. Minn.

Marketing potatoes.--To investigate the market for North Dakota table and seed stock.--To assist farmers in organizing potato shipping associations.--To furnish farmers and dealers with reliable up-to-date marketing information, and to assist farmers in finding reliable dealers. N.Dak.

Marketing certified seed potatoes. N.Dak.

The marketing of California sweet potatoes, Irish potatoes, cantaloups and watermelons. The methods now used and the functions performed by each of the agencies taking part in the movement; also, the proportion of the consumer's dollar taken by each agency, methods of price determination, and present and possible markets for the products. Calif.

RURAL ECONOMICS--Marketing. (Cont.)

Wheat marketing investigations. Studies of farm storage, credit, and quality factors in the marketing of wheat. Kans.

An economic study of costs and methods of marketing fruit in New York State. N.Y. Cornell.

An economic study of the costs and methods of marketing beans and wheat at country shipping points. N.Y. Cornell.

An economic study of costs and methods of marketing potatoes and cabbage in New York State. N.Y. Cornell.

Marketing organization investigations. Livestock commission firms. Minn.

Local costs of marketing livestock. Minn.

Cost methods and practices of marketing livestock. W.Va.

Investigations of methods and costs of marketing livestock. Ky.

Economic investigation of marketing of Iowa livestock. Iowa.

A preliminary investigation of the production and marketing of beef cattle in southwestern Virginia. Va.

The marketing of dairy products in Oklahoma.--To ascertain general prices of butterfat, of milk and cream in all sections of the State at four periods of the year. The kind of market available; amount of butterfat, milk or cream offered for sale at centers in all sections of the State; methods of marketing and form in which butterfat is marketed; and frequency of marketing and the factors determining prices. Okla.

Dairy marketing research in Texas. Tex.

Milk marketing. N.Y. Cornell.

An intensive study of the marketing of milk in the Chicago district. Ill.

Marketing dairy products.--To study various methods of marketing cream in North Dakota and the relative advantages or disadvantages of the various methods. N.Dak.

Economic study of milk marketing in New York. N.Y. Cornell.

Milk marketing investigations for New York City. N.Y. Cornell.

RURAL ECONOMICS--Marketing. (Cont.)

Study of methods and costs of assembling milk at country plants.
N.Y. Cornell.

Cost of marketing eggs. N.C.

Investigation of the marketing of poultry and eggs. Ky.

Study of the costs of marketing apples and eggs. Mass.

Prices.

Market price quotations. Minn.

Market price investigations. Minn.

Economic studies in price, volume of production, and purchasing
power of farm products. Nebr.

Prices of farm products. N.Y. Cornell.

Wheat prices. N.Y. Cornell.

Prices of agricultural products and other commodities. N.Y. Cornell.

Investigations of the forces determining the prices of farm products.
The price of potatoes in St. Paul and Minneapolis. Minn.

The relation of changes in the general price level to prices of farm
products. Minn.

Production and prices of apples, hay, potatoes, and cabbage. N.Y.
Cornell.

Rural Credit.

Farm credit. N.Y. Cornell.

Rural credit. N.Dak.

Farm credit survey. N.Dak.

A study of institutions which supply credit to Iowa farmers. Iowa.

A study of rural credits in North Carolina. N.C.

Rural credits in Tennessee. Tenn.

Study of mortgage financing in Texas. Tex.

RURAL ECONOMICS--Rural Sociology.

Rural life studies. Colo.

A study of rural social organizations. N.Y. Cornell.

Ranch economic and social problems. Tex.

Village population and service agencies. N.Y. Cornell.

Country life. A study of towns and villages as social and economic service stations. Wis.

Studies of village and open country interrelationships. Iowa.

A study of the social aspects of rural life and farm tenancy in Cedar County. Iowa.

Activities of other States and the United States in promoting rural progress. Tex.

General economic and social investigations. Okla.

Investigations of economic and farming conditions in irrigated districts. Calif.

An economic description of Connecticut agriculture. Conn. Storrs.

A rural social survey of Hudson, Orange and Jesup consolidated school districts of Black Hawk and Buchanan Counties. Iowa.

Survey of the agricultural-economic condition of the population of the rural section of eastern Kentucky. Ky.

A study of certain factors that influence rural life in New Jersey. N.J.

Rural training laboratory. A study of the rural primary groups of Boone County, Mo. Mo.

Economic analysis of Tennessee conditions. Tenn.

Country life investigations. A detailed study of seven Wisconsin small towns. Wis.

Country life investigations. Rural religious organizations. Wis.

Survey and analysis of rural church conditions in Texas. Tex.

The farmers' standard of living. Ky.

RURAL ECONOMICS--Rural Sociology. (Cont.)

The standard of living on the farm as a factor in cost production.
Mo.

Farm cost of living and standard of living studies. Iowa.

Financing public education in Texas. N.Y. Cornell.

Organization and administration of public schools in Texas. N.Y.
Cornell.

The relation of speed and accuracy in mental functions. N.Y. Cornell.

Community activities of teachers of agriculture in relation to
teaching. N.Y. Cornell.

Problems of rural school attendance. N.Y. Cornell.

A study of instruction in the New York State College of Agriculture.
N.Y. Cornell.

Adaptation of junior high schools to small communities. N.Y. Cornell.

Selection as a factor in the efficiency of schools. N.Y. Cornell.

Analysis of school population as determining type of instruction
needed. N.Y. Cornell.

Guidance resources of rural communities. N.Y. Cornell.

The influence of sickness and death on the economic and social status
of the farm family. N.Y. Cornell.

The psychology of child nutrition. Mo.

Miscellaneous.

Study of freight rates. N.Y. Cornell.

Agricultural statistics for North Carolina. N.C.

Farm census of North Carolina. N.C.

Fair insurance. N.Y. Cornell.

Insurance for farmers:- (a) mutual fire, (b) crop risk.--To collect
data on the advantages and disadvantages of farmers' mutual fire
insurance companies in other States and compare with conditions
in North Dakota and to analyze data available bearing on risks of
crop production in North Dakota and other States. N.Dak.

RURAL ECONOMICS--Miscellaneous. (Cont.)

Delineation of agricultural areas. N.Dak.

Land classification. Minn.

A study of geographical aspects of types of farming. Iowa.

Relation of industrial conditions to agricultural conditions. N.Y.
Cornell.

A survey of the production and consumption of certain foods in Atlantic
County, N.J. N.J.

A study of the production and consumption of human foods in New Jersey.
N.J.

Elasticity of supply of farm products. Minn.

Color knowledge essential to costume and its practical application. Mo.

Selection and economic use of soap in the house. Mo.

ADMINISTRATION, ETC.

Administration. Miscellaneous expenses. Wash.

Station administration. General conduct of station affairs; preparation,
editing, and issuance of station publications. Vt.

University farm campus. Minn.

Printing. Wash.

Publications. W.Va.

General maintenance. W.Va.

Reserve - general. Wash.

Reserve for salary increases. Wash.

Travel. Wash.

Director's office. W.Va.

Station library. W.Va.

INSPECTION AND CONTROL: ALSO

EXTENSION PROJECTS.

Control of fertilizers. (Law administered by the station.) Conn. State.
Fertilizer control. Ky. . . .
Fertilizer inspection. Me.
Fertilizer control. Mo.
Inspection of commercial fertilizers. N.H. N.Y. State.
State fertilizer, feed and insecticide control, and miscellaneous
analytical work. Tex.
Inspection of feeding stuffs. (Law not administered by station.) Conn.
State.
Feeding stuffs control. Ky.
Feeding stuffs inspection. Me.
Inspection of commercial feedstuffs. N.H.
Inspection of feeding stuffs. N.Y. State.
Feed control work. N.C.
Enforcement of the provisions of the pure feed law. Tex.
Inspection of foods and drugs. (Law not administered by station) Conn.
State.
Food and drug inspection. Me.
Inspection of insecticides and fungicides. Conn. State. N.Y. State.
Fungicide and insecticide inspection. Me.
Creamer and tester's license. Ky.
Calibration of Babcock glassware. Conn. State.
Creamery glassware inspection. Me.
Testing Babcock glassware. N.Y. State.

INSPECTION AND CONTROL: ALSO EXTENSION PROJECTS. (Cont.)

Accuracy of Babcock test glassware. N.Y. State.

Inspection of nursery and florists' stock. Ky.

Nursery and orchard inspection. Ky.

Nursery and orchard and nursery and greenhouse stock inspection. Nebr.

Seed testing and inspection. Ky.

Seed tests. N.H.

Seed testing laboratory. Mo.

State regulatory work. (Veterinary) Minn.

White diarrhea work. N.H.

Advanced registry work. N.H.

CHEMICAL WORK, ROUTINE AND MISCELLANEOUS.

Analysis of miscellaneous materials. Ky.

Miscellaneous analyses. Minn.

Feed analyses for division of animal industry. Minn.

Chemical service. Routine chemical work. Mo.

Analyses of miscellaneous samples. (Chemistry) Pa.

State Chemist's work. Wash.

Analyses and examinations for State Board of Health. Ky.

Chemical analyses of soil survey samples. Idaho.

Administration (chemical). Analysis of samples for other departments of the stations and residents of the State. N.Dak.

Complete analyses of 40 to 60 samples of milk each month for the Department of Biology in connection with cattle breeding work. Me.





